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Organisational culture factors and knowledge management practices identified within a proposed Knowledge Management Structural Model from an employee perspective within a Telecommunications Company in Jordan

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Organisational culture factors and knowledge management practices identified within a proposed Knowledge Management Structural Model from an employee perspective within a Telecommunications Company in Jordan

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Abstract

This study aimed to identify a key organisational culture and knowledge management factors to be incorporated into a Knowledge Management Structural Model suitable for implementation within Jordan Telecom Group (Orange). It explores the extent to which these factors are embedded and implemented into the Group from an employee perspective and explores their interdependence.

There is currently an identified lack of information around the experiences of knowledge management within the Jordanian telecommunications' industry and so this study therefore aimed to add to the body of evidence in this field by focussing specifically on the knowledge management and organisational culture within the Jordan Telecom Group (Orange).

Following a critical review of the existing literature, the study formulates a proposed Knowledge Management Structural Model for the organisation combining key organisational cultural components and knowledge management practices together. The study then adopts a phenomenological approach using a mixed methodology and case study approach to assess how employees perceive these different components and practices in the context of Jordan Telecom Group (Orange).

A survey of 310 employees within the organisation was undertaken to gather their perceptions of the extent to which different organisational cultural factors and knowledge management practices exist within the Group. This was complemented with a series of focused interviews with managers within the organisation.

The key organisational cultural components identified in the Knowledge Management Structural Model included: information systems; organisational structure; incentive systems; operations; personnel; and leadership. The key knowledge management practices identified in the Model included: knowledge generation; knowledge sharing; and knowledge application.

Overall the study identified that there was a moderate to strong level of agreement from employees with the identified organisational cultural factors suggesting that the different elements of these are embedded in the organisation. However, information systems and organisational structure came out with the highest level of agreement levels from respondents and incentive systems and leadership came out with the comparatively lower scores. In terms of how employees perceived to what extent the different knowledge management practices are in place in the organisation, knowledge application came out on top followed by knowledge generation and then knowledge sharing.

Although much of the previous research in this field has suggested that there is a strong link between organisational cultural factors and knowledge management processes, this study found less of a correlation between the two. However, there was some evidence to suggest that knowledge sharing practices in particular, are more strongly associated with different organisational cultural factors.

Overall, however, the study has been effective in delivering a proposed Knowledge Management Structural Model for the Jordan Telecom Group (Orange) and in identifying areas of strength and areas in need of further development around some of the key organisational cultural aspects of the Group to ensure that any future implementation of knowledge management practices are successfully achieved.

Keywords: knowledge, knowledge management, organisational culture, organisational structure.

Declaration

I declare that the research contained in this thesis was carried out by me, and it has not been previously submitted to this or any other Institution for the award of a degree of any other qualification.

Ayman Abu-rumman

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Chapter One: Introduction

1.1 Introduction

There has been an explosive growth of interest in knowledge management over the last decade (Thomas, Marir, Mikusauskas and Patel, 2013: 8; Klein, 2012; Gordon and Grant, 2004) as knowledge is increasingly being seen as a key source of innovation and competitive advantage for organisations (Harris, McAdam, McCausland and Reid, 2013: 49).

Similarly, the current challenging economic climate and other market forces are driving the need for organisations to make efficiencies gain and work 'smarter' leading to renewed interest in the field of knowledge management (Colman and Murray, 2013: 65).

Within the telecommunications industry, leaders have identified knowledge as the most critical corporate asset. Within this industry, components of knowledge management include conceptualisation and measurement approaches such as balanced scorecard, knowledge management tools for stakeholders, and techniques to identify and assess knowledge gaps (Hounsel and Hom, 1999).

There is a growing recognition of the importance of organisational culture in determining the relative success or failure of different types of knowledge management models within this sector, with different cultural values of individuals leading to different knowledge sharing patterns (Wiewiora, Trigunarsyah, Murphy and Coffey, 2013), and ultimately influencing productivity and performance (Tong, Tak and Wong: 2013:14).

Similarly, there is evidence to support the view that the organisational culture is influenced by the national culture in which the organisation is located (Jung, Su, Baeza, and Hong, 2008: 622), one such culture being that found in Jordan.

The Hashemite Kingdom of Jordan provides an interesting case study for examining knowledge management and culture. Jordan is a lower middle income country, but one which has in recent times been implementing reforms to promote future prosperity. Along with clearer focus on infrastructure and education, strengthening the private sector is part of the national strategic modernisation agenda (Rabaai, 2009). Cultural changes however have been relatively slower in Jordan, despite it being known that societal culture attitudes help shape organisational culture attitudes towards ICT adoption and telecommunications, including in the Arab world (Twati and Gammack, 2006).

Jordan's organisational culture context is very complex. Whilst the will for change is strong, as the private sector re-emerges, its relationship with the Government operates within a set of paradoxes (Cerny, 1997), most specifically relating to the state being more interventionist in regulating market competitiveness.

In addition, many aspects of contemporary Jordanian society influence attitudes relevant to technology adoption and telecommunications. Whilst women are educated and free to work, Jordanian society believes that the sexes should have distinct roles which is reflected in the under-representation of Jordanian women in the overall work force (Tzannatos and Kaur, 2000). Although gender segregation figures in the Middle East are now changing to be more akin to international norms, much of this change is in industries such as tourism and agriculture rather than in industries such as telecommunications. Whilst progress is being made, Jordan still remains globally low in terms of women's economic participation. Interpersonal networks also traditionally dominate Jordanian culture. In the Arab world this is called 'Wasta' and deep connections of kin and obligation provide a strong foundation for decision making and information sharing (Hutchings and Weir, 2006). Such a culture can make implementing new knowledge management practices challenging.

In terms of telecommunications in Jordan, its highly developed, rapidly growing communications infrastructure, is being continually updated and expanded making the industry one of the most competitive ones in the Middle East.

The telecommunications industry in Jordan includes many technology-related business sectors including local and long-distance telephone services, satellites, internet, and wireless communications. In Jordan, the information and communication technology sector is one of the fastest growing sectors in Jordan. According to recent Jordan TRC report, there are around 75 telecom operators in the country who hold either a single or class license of operation.

At a time when capital in the telecommunications sector is scare, large scale investment is needed in Jordan to roll out networks and improve services (Macmillan, 2001: 173). This means that telecommunications service providers need to work more innovatively and effectively to attract private capital to encourage the sector to grow. Knowledge management therefore has a key role in facilitating this.

Within the industry there needs to be a systemic shift in the way that knowledge transfer is perceived and in the elimination of the traditional industry boundaries, by moving to advanced technology in driving forward the convergence of the networks. Meanwhile, the traditional markets in developed countries like Jordan are becoming much more saturated and the scale of growth of the telecommunication industry as an emerging market exceeds that of other developed countries with global competition.

Jordan is a developing country with highly educated human resources and is advancing in the fields of education, computerisation, and e-government, in addition there is a rapid spread of knowledge centres in remote areas, and the establishment of a legal environment to support this development (Appendix 1: Jordan Telecommunication Sector Profile).

In order to drive the industry forward, telecommunication service providers in Jordan need to develop an effective knowledge management framework solution suitable for the telecommunications industry in the country. There is therefore a need to focus on the developing global telecommunications market with an emphasis on both internal and external market conditions taking into consideration the following aspects:

- Industry regulations have been liberalised and the emphasis has increasingly transferred from the control of corporate behaviour to improving market effects;
- The constantly progressing technology is driving the conjunction of the networks resulting in the traditional definition of industry boundaries ceasing to exist;
- The traditional market in developed countries like Jordan is becoming overloaded, while the market growth balance in the telecommunication industry in the emerging markets exceeds developed dynamic flow countries with global competition.

Despite this, there is currently a lack of information around the experiences of knowledge management within Jordanian industry per se (Al-Shawabkeh, 2010) and within the telecommunications sector specifically. This study therefore aims to explore these phenomena further within this field, and to focus specifically on the knowledge management and organisational culture within the Jordan Telecom Group (Orange) which is an organisation that has identified knowledge management practices as a key strategic issue it wants to better understand and address in order to achieve competitive advantage.

1.1.1 The Study Organisation

Jordan Telecom Group (Orange) is considered to be one of the largest and fastest growing telecom providers in the Kingdom of Jordan and has a key role in developing and improving processes and outcomes in the Jordanian information and communications sector. The organisation currently has around 190 million customers in over 200 countries worldwide (Appendix 2: Jordan Telecom Group (Orange)).

1.2 The Need for this Research

Within the ‘information and knowledge’ era are created the main advantages for organisations via ‘knowledge capital’ (Elearn, 2009: 76-95). Nowadays, the largest companies in the world have sought to gain their main advantages, not only from their investment in new technologies and broadening market share, but also from the implementation of knowledge management in their processes (Abdolshah, 2011).

Given that many of the large international organisations are increasingly adopting knowledge management and its applications, it is necessary for the organisations in the Middle East to do the same and to start to move towards the implementation of knowledge management also.

Rapid advances in information and communication technology have brought with them a new dimension to daily life through the increasingly important role of personal e-business applications and communication devices. As different industries start to leverage opportunities for developing services and products through using the latest information technology and telecommunications, there is subsequent increased demand for information and communication professionals and knowledge workers in most parts of the developed world (Tong, Tak and Wong, 2013: 11); and Jordan is by no means an exception.

The findings from this research study will play an important role in increasing understanding of knowledge management in the Jordanian telecommunications sector where there is more limited research available currently (Al-Shawabkeh, 2010).

The data gained from this empirical and analytical study will promote awareness of the benefits of knowledge management applications and processes, and will illustrate what policies and procedures need to be in place to support the effective implementation of knowledge management and where attention needs to be focused. It will improve the understanding of the need to generate, share and apply this knowledge.

Knowledge management processes focus on the flows of knowledge and the processes of creating, sharing, and distributing knowledge (Figure 1-1). Information technology can help to facilitate each of the processes of capturing and creating knowledge, sharing and disseminating it, and its acquisition and application (Silwattananusarn, 2012).

Figure (1-1) Knowledge Management Technologies Integrated in the Knowledge Management Cycle

(Source: Dalkir, K., 2005)

This approach, in a world where all leading business organisations are entering the knowledge economy, Jordan Telecom Group (Orange) must establish a full and comprehensive analysis of the sector's current status and the sector's future expectations by applying the following steps:

- Increasing the effectiveness and the efficiency of the organisation by encouraging design makers and top management to implement knowledge management
- Raising general awareness of the importance of the knowledge management concept, and to attempt to form a better understanding of how knowledge management could be delivered effectively
- Analysing of the current organisational structure, and identify the challenges that constitute obstacles in implementing knowledge management
- Testing the impact of the organisational culture factors separately, and reducing the gap between the current and the expected status in the implementation of knowledge management.

This research will make a valuable contribution to improving and enhancing knowledge management within the Jordan Telecom Group (Orange) specifically, and more generally, it will add to the existing body of evidence in the field of knowledge management where current contributions focusing on the cultural aspects of implementation, from a Jordanian organisational perspective, are more limited.

1.3 Aim of the Study

The hypothesis of this study is that organisational cultural factors impact on knowledge management practices. The aim of this study is therefore to test if this hypothesis is true and if so, to what extent.

The hypothesis will be tested by firstly identifying the key organisational cultural factors and knowledge management practices that could be incorporated into a workable Knowledge Management Structural Model for Jordan Telecom Group (Orange), and then to explore the relative importance and existence of these in the Group from the perspective of its employees. Following a critical review of existing work in this field, it will explore understandings of knowledge and organisational culture and will examine how different cultural factors may impact on knowledge sharing within this organisation.

The findings will identify what an effective model of knowledge management will need to take account of when being developed and implemented in this organisational setting.

The research will help to establish a new understanding of the concept of knowledge management within this organisational and industry setting, and will contribute in the development and the enhancement of the overall services in the Jordan Telecom Group (Orange).

1.4 Research Questions

The key research questions to be answered via this study are: “Do organisational cultural factors impact on knowledge management practices?”

This will be answered via the following research questions:

1. What are the key organisational cultural factors that may impact on knowledge management practices?
2. What are the key knowledge management practices relevant to the Jordan Telecom Group (Orange)?
3. What key organisational cultural components and knowledge management components should form part of a proposed Knowledge Management Structural Model for the Jordan Telecom Group (Orange)?
4. To what extent do employees of the Jordan Telecom Group (Orange) perceive the identified organisational cultural factors to be embedded in the Group?
5. To what extent do employees of the Jordan Telecom Group (Orange) perceive identified knowledge management practices to be implemented in the Group?
6. What relationship is there between employee perceptions of the identified organisational cultural factors and their perceptions of the identified knowledge management practices?

1.5 Objectives of the Study

The objectives of this study, driven by the research questions, are to:

- Assess the current level of application of knowledge management practices in the Jordan Telecom Group (Orange) from an employee perspective
- Identify and propose what key organisational cultural factors and knowledge management practices should be incorporated into a Knowledge Management Structural Model for Jordan Telecom Group (Orange)
- Explore employee perceptions of the organisational culture within the Jordan Telecom Group (Orange) and their relation to knowledge management practices

- Examine the relationship between different organisational cultural factors and knowledge management practices in the Jordan Telecom Group (Orange)
- Make recommendations that can provide decision makers within the Jordan Telecom Group (Orange) with a clear vision for the future implementation of an effective knowledge management model and the adoption of a supportive organisational culture to accommodate this.

1.6 Scope

This study is exploratory in nature rather than being explanatory, which has been undertaken because there is insufficient data and information available concerning the telecommunication sector in Jordan, and because knowledge management as an approach is not sufficiently clear concerning the implementation of it in this setting.

Therefore, the study attempts to understand how certain organisational factors could determine whether the telecommunication industry is likely to adopt or, alternatively, dismiss the implementation of knowledge management as an approach. It focuses specifically on the experiences within the Jordan Telecom Group (Orange) in order to answer this.

Furthermore, the investigations in this research will identify any issues that are preventing the adoption of knowledge management models rather than simply confirming the fact that knowledge management systems do not generally appear to be implemented in the telecommunications sector in Jordan.

1.7 Structure of the Thesis

This thesis is organised into nine distinct chapters each focusing on a key aspect of this study.

Chapter one: “Introduction” is the introduction to the essence and problems that necessitate this study and the need for this research. It addresses the rationale of this research and confirms the scope of the study.

Chapter two: “Literature Review”. This chapter presents an overview of the conceptual definitions of knowledge management and organisational culture, and the related studies in this area.

Chapter three: “Proposed Knowledge Management Structural Model”. This chapter explores issues learnt from current knowledge management frameworks and models and then using the data gathered from the critical review of the literature chapter. It then introduces the proposed Knowledge Management Structural Model for the Jordan Telecom Group (Orange).

Chapter four: “Research Methodology”. This chapter will discuss the methodologies adopted in this work. It further defines the philosophical key components on which the research process is based and describes the leading approaches used in the investigations.

Chapter five: “Quantitative Survey Findings”. This chapter presents the findings from the quantitative employee survey comparing and contrasting perceptions of the different cultural factors identified in the Knowledge Management Structural Model and the knowledge management processes. It also tests the correlation between the two.

Chapter six: “Qualitative Interview Findings”. Informed by the findings from the employee survey, this chapter presents the key findings from the targeted interviews with managers around the specific issues raised in the survey in order to understand them better.

Chapter seven: “Discussion”. This chapter discusses the relevance of the key findings from the study and what this may mean for the studied organisation and the telecommunications industry more generally. It will emphasise the most significant issues that have impacted on the implementation of knowledge management, and will identify any limitations of the research.

Chapter eight: "Conclusion and Recommendations". This chapter provides a summarised description of the research. It focuses on showing how the results of the study relate to the original research questions and addresses the initial objectives set out in this thesis.

Figure (1-2) provides a summary of each of the seven chapters contained within this thesis, demonstrating the linear relationship between each stage of the study.

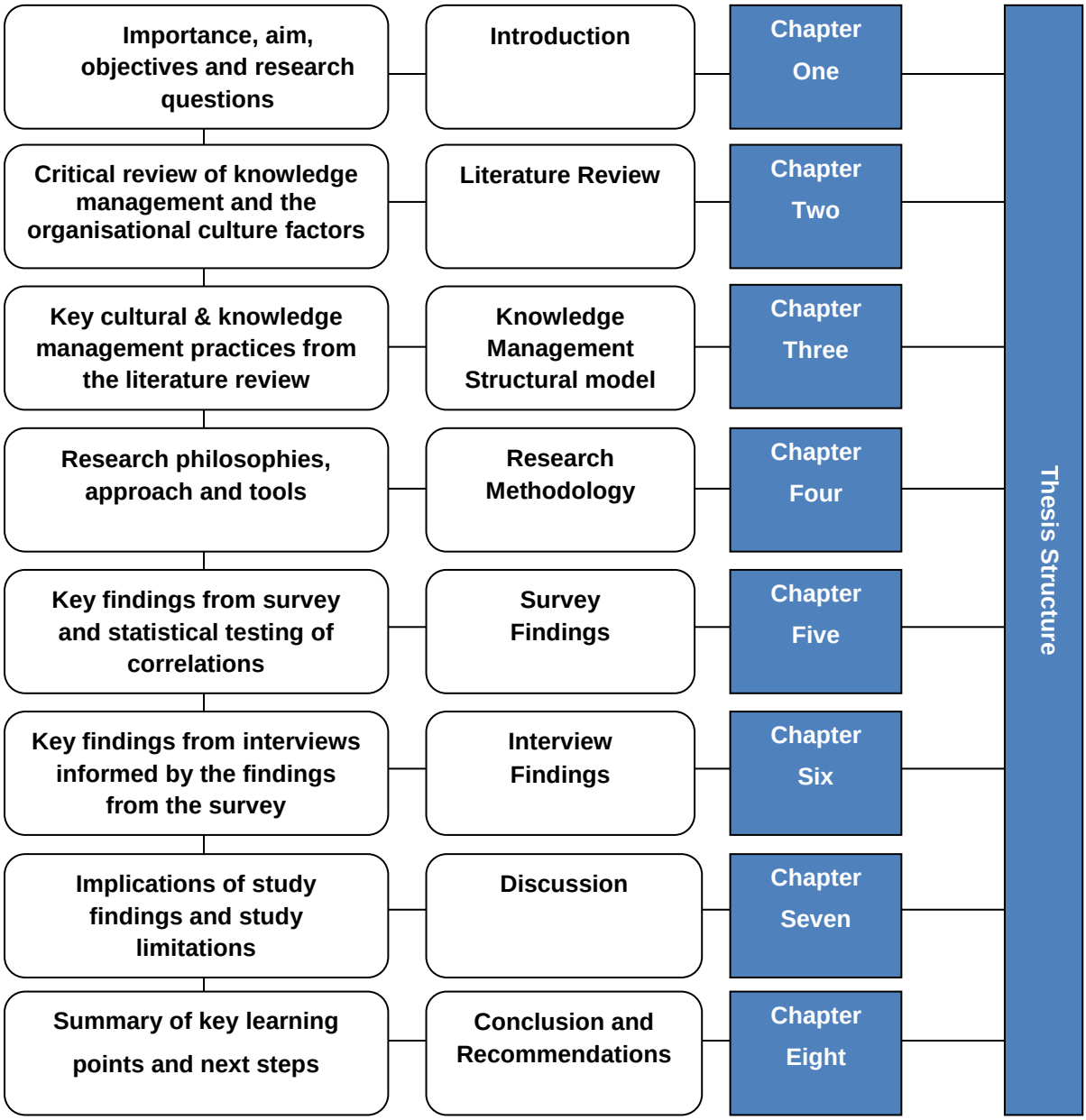

Figure (1-2) Structure of the Thesis

1.7 Chapter Summary

Chapter 1 has outlined the purpose and rationale for this research and has set out the aims, objectives, and research questions through the study along with confirming the scope.

The next chapter will provide a critical review of the existing literature around organisational culture and its relationship with knowledge management. It will compare and contrast the wide range of studies and aim to identify the key components to be included in a Knowledge Management Structural Model suitable for Jordan Telecom Group (Orange).

Chapter Two: Literature Review

2.1 Introduction

This chapter provides a critical review of the existing literature exploring the concepts of knowledge, knowledge management and culture. Through an extensive evaluation and comparison of existing studies identified in a wide range of published academic literature, reports and internet entries, the importance, characteristics and classifications of knowledge and knowledge management are identified and the impact of organisational cultural factors upon these is investigated.

2.2 Knowledge

2.2.1 Understanding the Concept of Knowledge

Knowledge is a very important and controversial terminology in the field of knowledge management since it is still disputed (Nonaka and von Krogh, 2009) and there is no universally accepted definition (Hassan, 2008: 14). Knowledge has been recognised and discussed for centuries stemming back to ancient philosophers and scientists, including Arab and Muslim philosophers, such as Al-Farabi (872-950AD), Al-Kinde (801-873 AD) and Iben Sina (980-1037AD).

The importance of knowledge in organisations appears in its added value and in the role it plays in the transformation to knowledge economy organisations; which ensures intellectual capital, knowledge and competitiveness through human capacity (AL-Zyadat, 2008: 20). Asif, de Vries and Ahmad (2013:666) argue that knowledge is important as it is a sustainable source of competitive advantage for organisations.

The attention to knowledge is as old as the human, and the Chinese philosopher Confucius (479 - 551 BC) had said: "knowledge is the only way to success", so it was natural for this focus to continue into the current era, after the three revolutions (information, communication and technology) have guided the road that provided ways to exchange knowledge and contributed in doubling its size dramatically (AL-Qbesy, 2005: 45, 46).

The linguistic meaning of knowledge refers to the simple or partial perceptive understanding, while the description of (knowing) is the overall cognition (AL-Ali, 2006: 25).

Al-Omari (2004: 29) proposes that knowledge is rooted in the mind of the knower, and included in the organisation and the community, not only in the documents and the repositories of knowledge, and refers to it as the "know-how". It is a mix of concepts, ideas, rules and procedures that allow individuals and organisations to create new situations and change management (Yassen, 2007: 25).

According to Spaeth, Stuermer and Von Krogh (2010: 411), knowledge can be defined as something which makes personal, organisational and socially intelligent behaviour possible and consists in a number of different forms of artefacts that come in the form of conversations, written word, observations and pictures.

They argue that from an organisational perspective, knowledge can be considered from five interconnected perspectives including:

- the business perspective (where knowledge is needed to inform things like strategies and service development)
- the management perspective (where knowledge is needed to plan, organise and direct the organisational activities that are need to achieve the organisation's strategic goals)
- the operational perspective (where knowledge is needed to recruit, train and develop human resources)
- the learning perspective (where knowledge is considered the basic ingredient for organisational learning), and
- the innovation perspective (where knowledge is used to undertake better training, research and development and enhanced systems).

Davenport and Prusak (1998: 5) define knowledge as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information".

They argue that knowledge originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in written word, but also in organisational processes, practices, routines and norms.

In a later study, they define knowledge as the combination of experience, values, and contextual information; allowing the bringing of new experiences and new information, and often becoming well established in the documents, work routines, processes, practices and rules of organisations (Prusak & Davenport, 2000: 77).

Knowledge is a mode of change that is organic and with so many pathways in its management, relying on both people and processes which generate, share and apply it in important ways. Knowledge needs to be disseminated in order to be shared and undergoes changes via tacit and explicit conversions via those pathways before being applied in organisations.

Based on consideration of the above perspectives of the concept of knowledge and its relevance to the Jordan Telecom Group (Orange), and for the purpose of this study, knowledge is defined as the combination of expertise, experiences, judgments, values, beliefs and interrelated data beside the accumulated contextual information for the individual or the organisation; to be employed in the evaluation and the discovering of relationships and to solve problems, with the organisation being able to obtain knowledge from internal and external resources. This definition has been originated and consolidated from the other considered definitions in the literature review as being most relevant to Jordan Telecom Group (Orange).

2.2.2 Characteristics of Knowledge

Housel and Bell (2001:5) identified the following key characteristics of knowledge:

1. Knowledge can be generated: This means that some organisations have a rich mind; capable of generating knowledge by individuals, innovators and creators.
2. Knowledge can die: because what is documented is just a small part of knowledge, so it dies with the person.

3. Knowledge can be possessed: important knowledge is usually kept in order to increase the wealth of organisations and to transfer knowledge with legal protection, such as any other assets.
4. Knowledge is rooted in individuals: this means that the knowledge is not necessarily visible and clear within the organisation, but it could be mental capabilities that can be turned into visible and clear knowledge.
5. Knowledge can be stored: in the past it had been stored on papers, films and tapes, but today it is stored by electronic means.
6. Knowledge can be classified: in addition to the implicit and explicit knowledge there are other types of classifications of knowledge, like learning how to do things in a way that increases the value of the organisation, as well as the knowledge of individuals related to the vision and intuition.

There are many types of knowledge, but for the purpose of this study, focus will be given to the knowledge presented by specialists in knowledge management as being most beneficial to this field:

Type one: is concerned with the knowledge framework and its representation in the information technology system. Its components are as follows:

- **Procedural Knowledge:** This describes the processes of problem solving.
- **Declarative Knowledge:** This explains the relationship between what is known about a problem and the choice of what is right and wrong.
- **Meta-Knowledge:** This represents the knowledge itself, and helps choose the suitable knowledge to deals with a problem and then to reinforce the system's efficiency for solving problems effectively.
- **Heuristic knowledge:** this is the Knowledge though logic principles controlling perception process over thinking.

Type Two: is classified into three types as follows (Najm, 2005):

- **Core knowledge:** Which is the minimum level of knowledge required, and that level of knowledge capability will not assure the long-term competitive viability of a firm, but it does present the basic industry knowledge barrier to entry.
- **Advanced Knowledge:** This enables the firm to be competitively viable.
- **Innovative knowledge:** Which is the knowledge that enables the firm to lead the industry and the competitors and then to significantly differentiate itself (Najm, 2005).

Type Three: which is classifies knowledge into four categories:

- **The Know-How (Procedural):** Representing the scientific knowledge pertains and the way of doing things.
- **The Know-What (Perception):** Which leads to achieve the highest experience in solving the problem by knowing what comes after the basic skills.
- **The Know-Why (Causality):** In representing a deeper understanding of the interrelationships across the domains of knowledge.
- **The Knowing purposes (interested in reasons or the Care-Why**): Representing the need of a group of social contextually guiding directly or invisibly the strategic choices and transactions costs and returns related to these choices (Dalkir, 2005).

Type Four: identified by Michael Polanyi - argued by many authors as the ‘father of knowledge management’, during 1959-1966 in ‘The Tacit Dimension and Personal Knowledge’.

Polanyi classified knowledge into two forms – explicit and tacit – and stated that "we know more than what we can tell others about, and we can do things without being able to tell others how we know them exactly" (Firestone and McElroy, 2003). In his categorisation, explicit knowledge is the codified, concrete, systematic, standardized, formal, transferable and learnable knowledge, which is also called leaked knowledge for the potentiality of running out of the organisation, represented in policies, procedure, regulation or rules and work routine that are documented by the organisation (Dalkir, 2005).

Tacit knowledge is the informal, non-transferable and non-learnable knowledge that is difficult to be stated in words, as existing in the minds of the individuals, so that it is the adjoining knowledge and it is the accumulated experience, mind thinking maps and the groups of acquired knowledge of individuals that no one can know without permission from its holder. This categorisation of explicit and tacit knowledge is still one of the most common and widely used (Hjazi, 2005: 47-49).

The diagram shown in Figure 2-1 illustrates the useful way of teasing out the distinctions between and amongst explicit, tacit and implicit knowledge:

Figure (2-1): Explicit, Implicit and Tacit Knowledge
(Source: Nickols, 2010)

Haldin-Herrgard (2000: 359) emphasises that tacit knowledge is difficult to encode or to be documented, and the reason behind this is that tacit knowledge is endemic in the human mind and behaviour; in addition it is very personal and subjective. Examples of tacit knowledge are the intuition, looks, beliefs and values (Aurum, Daneshgar and Ward, 2008).

Tacit knowledge is also described as the underlying knowledge, because it is stored in the minds of their owners and is not available to others; it remains locked in the minds of individuals. As a result, tacit knowledge is considered to be the key to competitive advantage (Bailey and Clarke, 2000: 236).

Ambrosini and Bowman (2001: 812) highlighted the effective analytical use of tacit knowledge to gain competitive advantage, due to the claim that tacit knowledge is difficult to imitate, replace or transfer. It is also rare and considered to be the strategic origin of organisations. Tacit knowledge can be used without thinking, so there is potential of it losing its power if it were to be translated into explicit knowledge. Table (2-1) displays the major differences between tacit and explicit knowledge as follows:

Table (2-1) Differences between tacit and explicit knowledge, prepared by the researcher and adapted from previous studies

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Source: Ambrosini and Bowman (2001)

In addition to the previous classification many writers and researchers presented other classifications; Zack (1999: 125) proposed a classification of knowledge with three levels as follows:

1. Fundamental knowledge: The minimum requirement of knowledge for the organisation to do its part.
2. Advanced knowledge: The knowledge that enlarges the organisation competency.
3. Innovative knowledge: The knowledge that will enable the organisation to reach excellence.

Tiwana (2002: 51) also presented another classification for professional knowledge with four levels as follows:

1. Know What: This represents the cognitive level of knowledge, and it's related to know way of doing things, which is necessary, but it is not sufficient to compete.
2. Know How: Represents the ability to translate cognitive knowledge to practice
3. Know Why: Represents the deep knowledge of the complex causal relationships.
4. Care Why: Represent the self-stimulation of creativity, and this level will be embedded in the culture of the organisation.

In order to improve the competitive advantage; organisations must acquire new knowledge; one of the most important ways to achieve that is knowledge creation, generation and development (Jashapara, 2004: 70).

The Nonaka & Takeuchi Knowledge Spiral model (1995) shown in Figure (2-2), is one of the most famous models for demonstrating the activity and process to transfer knowledge. It is based on the idea of having a helical and interactive movement of tacit and explicit knowledge, combined with four transformation processes that will lead the generating of new knowledge; these processes are (Dalkir, 2005):

1) Socialization. This is the process of transformation from tacit knowledge through social interaction in the work environment.

2) Externalization. This is the transformation of the individual’s tacit knowledge to a new tacit one, which is written and codified in any form of explicit knowledge.

3) Combination. Transformation of explicit concepts of knowledge to another new form of explicit knowledge and to a new knowledge system.

4) Internalization. Transforming explicit knowledge into tacit knowledge, through activities such as simulation, interactive training and training at work

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Figure (2-2) Nonaka and Takeuchi Knowledge Spiral
(Source: Dalkir, 2005: 53)

Another viewpoint put forward on the debate around knowledge characteristics is that given by Soliman (2013: 6) who suggests that for knowledge to be useful it must encompass nine key characteristics being: accuracy; timeliness; relevance; authority of source; purpose; importance; accessibility; applicability; and suitability. He argues that the success of knowledge management approaches should encompass these characteristics.

2.2.3 Knowledge Sharing and Personnel

Knowledge sharing is the process of transforming and transferring knowledge to the employees who need it; in order to carry out essential tasks (Dalkir, 2005: 22). The process of knowledge transferring and sharing is done through joint efforts, communication processes, training, face to face discussions, and informal meetings or through the exchange of documents (Awad & Ghaziri, 2004: 249).

The real value of knowledge can be known only when it is shared with others. The importance of knowledge-sharing is linked to several factors including global competition, the complexity of the work environment, constant change, and the knowledge-based economy. Sharing of knowledge can improve operations and the capacity of individuals to understand, reduce waste and improve productivity. The obstacles to knowledge sharing (Chait, 2008: 277) can be divided into two categories:

- Personal obstacles: lack of time to participate, not knowing who we can contact, weak social networks and the low levels of confidence
- Organisational obstacles: weak compatibility and the lack of initiatives concerning knowledge management.

Knowledge management practices are very much dependent upon the individuals within an organisation who fulfil different roles and whose contributions to the pool of knowledge is directly related to their respective job functions (Mukherjee, 2007: 47). In order for knowledge management to be effectively implemented individuals within the organisation need to develop a more holistic perspective of the organisation's functions and strategic goals as they become aware of knowledge from functional areas other than only their own.

This can then impact on enhancing the organisation's competitive advantage through enabling a better recognition of the opportunities and challenges in the external environment. In addition, when employees from different functional areas engage and communicate with each other, it is not only information and knowledge that is exchanged, but also different perspectives and ideas. This can have a subsequent impact on motivation and creativity and lead to increased levels of innovative and exploratory behaviours which can benefit the organisation (Mukherjee, 2007: 47).

However, despite this, without the right organisational culture, structure, management and leadership, some employees are reluctant to share knowledge. Some of the reasons cited in the current literature around this include (Skyrme, 2002):

- Some feel that "Knowledge is power" – and people are reluctant to let go of this in case they give up their power status within the organisation and a lack of trust that their knowledge will not be misused or given the appropriate recognition
- Lack of understanding or appreciation of how useful particular knowledge may be to others or similarly, knowledge derived for one purpose may prove to be helpful in completely different contexts; or it may be a trigger for innovation
- Lack of time. Increasing pressures on productivity and on meeting deadlines mean that time is not allocated to knowledge sharing or is not prioritised.

2.2.4 Knowledge Applications

Knowledge applications are the processes of practice and the actual use of the knowledge that has been gained or generated (Dalkir, 2005: 146), and the applications of knowledge as an important objective of knowledge management and its operations, and includes the use of specific terms of knowledge, such as (use, re-use, utilization, and application), so successful administration knows when and how to use the available knowledge at the right time.

The process of applying knowledge in the organisations must provide quick answers to employees and, thus, there is a range of practical applications that help in applying knowledge (Dalkir, 2005, 172), including:

- Knowledge leading support; to develop a knowledge management strategy of the organisation and its application, and creates the organisational knowledge- base to contain intellectual assets.
- Capturing best practices and lessons learned, to make it available to all members of the organisation by the knowledge base.
- Making sure that the organisational culture helps to facilitate the main stages required for the knowledge management cycle, and feeding and updating the memory of the organisation.

Knowledge application includes application for decision-making, action and problem solving and can ultimately lead to knowledge creation which in order to continue the cycle needs to be captured, shared and applied (Allemeh, Zamani and Davoodi, 2011). Gottschalk (2008) argues that information technology supports knowledge application in the organisation by using an organisational procedure.

Probast *et al* (2000) argue that knowledge application faces a number of obstacles including a resistance from organisations due to a lack of understanding or mistrust and a lack of appreciation of the importance of new knowledge or idea exchanges and refer to this as ‘organisational blindness’.

2.2.5 The Relationship between Knowledge, Information and Data

Krmelli (2005, 61) refers to the importance of the distinction between knowledge, data and information. Lang (2001: 46) stated that human beings are the key element in the creation of knowledge, and knowledge is formed through the dissemination of knowledge; and therefore knowledge differs from data and information.

Bhatt (2000: 16) explained that the data are raw facts, and when organized and processed it becomes information. The failure of distinguishing between data, information, and knowledge leads to a simplistic perceptions of knowledge, and we can differentiate between these concepts as follows:

1. Data: Is the virgin information like numbers, sounds and images associated with the real world as it is?

2. Information: Is the result of processing data manually or computerised, and guarantee them a specific context, systematic internally, and a high level of accuracy and objectivity?

3. Knowledge: A combination of concepts, ideas and rules, which govern actions and decisions, thus it is information mixed with experience, facts, judgments and values (Yassin, 2007: 24).

Knowledge leads to another term which is wisdom; which represents the accumulation of knowledge with an advanced thinking of a person with values and commitment. Others also confirm that intelligence comes before wisdom, where the man begins to address knowledge with prediction methods in order to look at the future by using his mind to choose between alternatives. According to Ackoff (1989) the mind is classified into five distinct categories of: data; information; understanding; knowledge; and wisdom. These categories are often represented pictorially in what is known as the ‘knowledge pyramid’ (although often the category of ‘understanding’ is omitted).

In this context: data is merely just facts that need to be processed into information; information is data combined into meaningful structures; knowledge is interpreted information put into a context; and wisdom is the ability to exploit data, information and knowledge within a given context to achieve its goal (Wognin, Henri and Marino, 2012: 182).

Figure (2-3) illustrates this relationship between information, data, knowledge, intelligence and wisdom into the knowledge pyramid:

Figure (2-3) The Hierarchy of the relationship between information, data, knowledge, intelligence and wisdom
(Source: Ackoff, 1989)

2.3 Knowledge Management

2.3.1 Understanding the Concept of Knowledge Management

Knowledge management as a system is both new and old; it is the combination of ideas that support enhancing work systems. As a concept, knowledge management does not come from consultants (Lapause, 2003: 99); but instead constitutes the substantial and the practical response of workers, executives and specialists to the economy needs of society: communication technology, globalization and the cognitive perspective of businesses or organisations, in general.

Over the last decade there have been an increasing number of significant contributions within the knowledge management literature. According to Malhotra (2000), much of this stems from the need for organisations to continually reassess the way they work to ensure that they are keeping pace with the dynamically changing business environment.

Furthermore, Bratianu and Orzea (2011) state that organisations are constantly under the influence and pressure from internal and external forces which impacts on how knowledge is managed. Both forces are in continuous movement. The external environment, which is subjected to a larger number of acting forces toward its modification, conditions in its turn the modification of the acting forces within the environment of the organisation. For example, advances in technology, research and development external force the organisational internally to respond to remain competitive and keep up pace.

Knowledge management is an emerging field (Kuan and Eliane, 2004: 45) and as a concept, there is no universally agreed definition for what it comprises of. Jashapara (2004: 10) noted that the multiplicity of definitions is not surprising, and stems from many perspectives, as illustrated in Table (2-2). Some definitions come from the perspectives of information systems, some suggest human source, and others adopt a strategic perspective.

Table (2-2) Representative samples for the knowledge management definitions

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Source: Jashapara, Ashok, (2004), Knowledge Management: An Integrated Approach, Prentice Hall, England, p.11

Despite the variations in definition, one of the most common descriptions of knowledge management is as a business practice, which emphasises the dispersion, creation, and use of knowledge (Davenport & Prusak, 1998; Alavi & Leidner, 2000). The purpose of knowledge management is to enable the organisation to gain access to the knowledge held within the individuals in the organisation.

Pauleen and Mason (2002: 39) describe knowledge management as a systematic process designed to find, select, organize, and present information to improve the understanding in a specific area, and it also helps the organisation in gaining experiences of knowledge to solve problems, learning, strategic planning, and decision-making.

According to Wiig (2002: 2), knowledge management is composed of a large number of practical ways, best practices, and techniques for managing operations related to knowledge within organisations. It is also a philosophy for managers to control the applications of new business strategies, or to improve performance.

Chong, Holden, Wilhelmij and Schmidt (2000: 367) had identified knowledge management as the process of upgrading and organising skills and experience of the employees, supported by the information technology, while Bhatt (2000: 15) had described it as the process of creation, verification, providing, distributing and implanting knowledge.

Daft (2001: 261) had referred to knowledge management as the efforts of managers for the purpose of organising and building the organisation's capital of information resources or what we call intellectual capital, Newell *et al* (2002: 23) had declared that knowledge management is seeking to develop a strategy acquires knowledge to be used and transferred effectively across the organisation, in order to improve performance and to provide a sustainable competitive advantage. Dalkir (2005: 3) had also defined knowledge management as a deliberate and systematic coordination of people, technology, operations and organisational structure in order to add value and to re-use of data and the innovation.

A study undertaken by Kotlarshky, Van Fenema and Willcocks (2008) stressed the importance of technology and the organisational structure in facilitating effective knowledge management, and in the generation and sharing of knowledge. This is confirmed by the findings from a study conducted by Aurum *et al* (2008) who also stressed the importance of technology in delivering effective knowledge management practices.

According to Ruggles (2012: 1), knowledge management involves three main activities relating to: generation; codification; and transfer. Generation activities are those which bring to light new knowledge including activities such as creation and acquisition. Codification involves the capture and representation of knowledge so that it can be reused by others. Transfer involves the movement and subsequent absorption of knowledge.

Given the multiplicity of definitions, areas of commonality have been identified and consolidated, and for the purposes of this study, knowledge management has been identified as a systematic administrative processes of knowledge management and its main operations (generating, sharing, and applications) in order to achieve the organisation's competitive advantage and to contribute in the achievement of the main goals.

2.3.2 Importance of Knowledge Management

The importance of knowledge management is emphasised through the many potential benefits it may offer to individuals and organisations (Dalkir, 2005: 20). These include:

- For individuals: assists in the implementation of tasks and saving time by improving the processes of decision-making and problem-solving, and building a sense of community ties within the organisation, and also helps to maintain knowing what is happening, and creates challenges and opportunities.

- For organisations: helps in guiding the strategy, solving the problems quickly, and spreading the best practice methodology, and increases the opportunities for innovation, and then enables the organisation to survive.

The increasing importance and the growing need for effective knowledge management and its applications relates to the following four main factors:

1. Globalization of business: organisations today are more global than the past, as it spreads in more than one location, and communicates with several languages.

2. Organisations are leaner: individuals in the organisations are working harder, and more quickly, but they need to work intelligently as knowledge makers.

3. Corporate amnesia: Organisations in the movement as a work force, creates problems for the continuity of knowledge, and this imposes the need for continuous learning.

4. Technological advances: This technological progress makes the process of communication grow and works on making some radical changes in the expectations (Dalkir, 2005: 18).

A study conducted by Al-Momani (2005) of managers' attitudes towards the implementation of knowledge management in public institutions in Jordan, found that there was a high level of awareness of the concept of knowledge management amongst managers and a high level of value attached to it.

Similarly, a study conducted by Chan and Chao (2008) of 68 organisations implementing knowledge management in Hong Kong confirmed the importance of the role of managers in facilitating knowledge management.

2.3.3 Knowledge Management and Performance

Knowledge management has turned out to become a strategic resource of organisation to the extent in which knowledge management nowadays is viewed as the basis of all activities in the organisation.

Knowledge management, as a modern concept in different organisations, will be able to help organisations face the future challenges in the third millennium, characterised by a rapidly changing world, dominated by information and communication revolutions (Alavi *et al*, 2006: 190). This has led many drivers to strengthen the role of knowledge management in achieving production efficiency and effectiveness of the organisations (Nevo & Chan, 2007: 590). Some of these important factors that stressed the need to adopt knowledge management are: globalization and the increasing volume of global trade, increased competition, and the high speed of the movement of capital and labour.

All these elements drive many companies, including the telecommunications sector, to direct their investments towards the activities of individuals and other means that work to create a knowledge management culture in achieving competency and by offering solutions that go beyond technology, reaching the organisational interrelationships and networks within the internal and external environment and, thus, work to build a better memory for ideas, traditions, practices, and business systems (Yassin, 2007: 48).

Within the last decade there has been an effort by researchers to demonstrate the importance of knowledge management, and its influence and impact on the organisational performance (Hou, 2012; Gao and Zhao, 2011). This has led to a growth in the perception that knowledge management systems are a crucial aspect in the development and dynamism of many organisations, and knowledge management has a positive impact on organisations performance and in turn on their competitive positions (Soliman, 2013: 10).

Effective knowledge management is considered by some to be the most important and valuable element to achieve competitive advantage, provide high-quality services to all clients, and to enhance performance under the globalization umbrella and the changeable environment within which organisations exist at present.

Knowledge is a powerful tool that can change the world, and it is the major intangible component that makes innovation possible (Sanchez, Chaminade and Olea, 2000: 313). It is also considered to be an essential strategic resource in building competitive advantage and driving forward change and development (Hassan, 2008, 14).

A study focusing on knowledge management within the Jordan Telecom Group (Al-Shishani, 2004) found that it was an effective way to gain competitive advantage and found a positive trend in the administrative leadership towards the use of information and communications technology development in order to provide premium services.

However, whilst most of the latest research indicates the link between the implementation of knowledge management practices and improved performance not many organisations who claim to have implemented these practices are noted for having done it in a particularly effective or successful way (Chong, Yew and Lin, 2006).

Performance measurement is an instrumental consideration when aiming to successfully implement a knowledge management programme, however few organisations have developed sufficiently robust and well organised measure of performance to appraise their knowledge assets (Longbottom and Chourides, 2001). Similarly, in order to measure and assess the outcomes from implementing knowledge management programmes, clarifying and developing structured criteria is an essential task of organisation (Anantatmula, 2005).

Therefore, the development of a successful knowledge management framework requires well-defined objectives and criteria.

2.3.4 Knowledge Management and Organisational Structure

Organisational structure can be defined as the formal relationships and allocation of activities and resources amongst people (Allameh *et al*, 2011). Tata and Prasad (2004) explored the major structural dimensions of centralisation and formalisation where centralisation refers to the hierarchical level that has the authority to make decisions within an organisation, and formalisation refers to written documentation, organisational rules, policies and procedures which can all affect the communication of knowledge (Schminke, Ambrose and Cropanzano, 2000). In contrast, decentralisation is a structural factor that can enhance the sharing of knowledge by giving employees the required authorisation to do so (Hurley and Green, 2005).

Probast *et al* (2000) argue that organisational structures are frequently not made to be responsive to knowledge management needs. A range of geographical or functional obstacles may make knowledge distribution difficult.

Organisational structure which promotes individualistic behaviours, and where different departments and sections are rewarded for holding on to information inhibits effective knowledge management within the organisation (O'Dell and Grayson, 1998).

Adli Fariba's (2009) study of knowledge management focused on implementation parameters which were researched in 2009. It was confirmed that organisational structure has a meaningful role in knowledge management implementation processes.

Similarly, other studies have also proved that organisational structure and organisational processes have an important role in knowledge management implementation (Ghorbani, Tavasoli and Nikoukar, 2011; Fathollahi, Afshar Zanjani and Nozari, 2010).

2.3.5 Knowledge Management and Information Systems

Much of the current literature focuses on the importance of having the right information systems in place to facilitate effective generation, sharing and application of knowledge across organisations.

Much of the focus of recent studies is looking at information systems from an Information and Communication Technology perspective (Lee and Lan, 2008: 729). This focus acknowledges the importance of information technology and its associated systems as being a catalyst for efficient information sharing (Yap and Bjørn-Andersen, 1998) due in part to the fact that it can be done regardless of temporal distance, physical distance and social distance (Ruggles, 1998), and it has been argued that any knowledge management system would not be successful unless underpinned by a robust information technology system (De Carvalho and Ferreira, 2001).

These systems have been categorised into key categories including: document management systems, information management systems, searching and indexing systems, expert systems, communication and collaborative systems, and intellectual assets systems (Ruggles, 1998; Angus, Patel, and Harty, 1998; and Wensley, 2000.

2.3.6 Knowledge Management and Leadership

Within the literature, there is a strong focus on the impact of leadership on knowledge management practices within organisations. In particular, previous studies have suggested that leadership behaviours are considered to be a key barrier to creating and leveraging knowledge (Politis, 2004).

De Long and Fahey (2000) argued that it is essential to define how leadership styles affect an organisation's ability to generate and apply knowledge, so that managers can ascertain the fit between their organisation and their knowledge management objectives. Nguyen and Mohamed (2011) claim that due to the role leaders have in the organisations, they have a significant impact on knowledge management practices. They have a key role in creating or preventing the conditions that allow their employees to develop and strengthen their knowledge manipulation skills, generate their own pool of knowledge resources to contribute to the organisation's knowledge pool, and to have easy access to the information they need (Politis, 2002; Crawford, 2005).

In order to have effective knowledge management practices in place within the organisation, leaders need to assign a high value and priority to knowledge, and should empower their employees by encouraging questioning and experimentation (Castiglione, 2006). From their empirical investigation into leadership and knowledge management, Nguyen and Mohamed (2011: 218) concluded that 'charisma and contingent reward' are the most effective leadership behaviours required for knowledge management practices and proposed that leaders should therefore focus on enhancing these behaviours and should build respect and trust amongst their workforce, clarify expectations, and provide rewards on successful completion of key tasks.

2.3.7 Knowledge Management Models

We cannot consider technology as the most important aspect of knowledge management; however it does play a crucial role in facilitating collaboration and communication among knowledge workers in any organisation.

Tacit and explicit knowledge both can be managed better by using a structured knowledge management system: which is a specialised system that interacts with the organisation's systems to facilitate all the aspects of knowledge processing.

For Schreiber *et al.* (1999), knowledge systems are all the tools for managing knowledge, and helping organisations in problem-solving activities for facilitating the making of the decisions.

Knowledge models are used to capture the essential features of the real systems by dividing them down into more manageable parts to be easy to understand and to manipulate, these models are extremely associated with the domain they represent (Savolainen, Beeckmann, Groumpos and Jagdev, 1995).

The importance of knowledge modelling in knowledge management has been widely discussed (Wielinga, Sandberg and Schreiber, 1997); and it is argued that these models are highly important for understanding the working mechanisms within any knowledge-based system or systems, such as: the methods, tasks, how knowledge is inferred, and the domain of knowledge and its schemas.

A range of different models for knowledge management have been proposed.

Allameh *et al* (2011: 1218) presented a model of knowledge management with two dimensions these being knowledge management and its enabling factors which is similar to the work of Lawson (2003) who also used this model. In the model the knowledge management cycle is categorised by six different processes:

- knowledge creation
- knowledge capture
- knowledge organisation
- knowledge storage
- knowledge dissemination
- knowledge application.

The enabling factors were based on work undertaken by Lee and Choi (2003) and Park (2006) and included technology, structure and organisational culture. Figure (2-4) illustrates their knowledge management model:

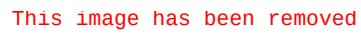

Figure (2-4) Knowledge Management Model
(Source: Allameh *et al*, 2011: 1218)

From a different perspective, Housel and Bell (2001: 136) identified a model to assess the relative maturity of an organisation's knowledge management activity called 'Knowledge Management Maturity Model'.

In this model they identified five levels:

- Level 1: the minimum level of commitment where organisations fragment knowledge into individual categories that are not explicitly documented;
- Level 2: organisations share only routine and procedural knowledge;
- Level 3: organisations are aware of the need to manage knowledge and knowledge propagation systems are in place but not well maintained;
- Level 4: knowledge sharing systems exist and knowledge sharing is increasingly integrated across the organisation;
- Level 5: knowledge sharing is institutionalised.

Whilst this provides a useful framework for assessing the extent to which knowledge management has been implemented in different organisations, models such as this have been criticised for a lack of empirical validity (Gottschalk, 2005: 149; Benbasat, Dexter, Drury and Goldstein, 1984: 476). A range of perspectives on this is illustrated in Figure (2-5) below:

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Figure (2-5) Compared knowledge management cycle key processes

(Source: Dalkir, Kimiz (2005), Knowledge Management in Theory and Practice, Elsevier Buttersworth-Heinmann, p.43)

During the transition process of finding knowledge, sharing knowledge content is estimated, and then given the appropriate context and environment, so as to be acquired and used, and this cycle returned through feedback; in order to update the content of knowledge.

An alternative model proposed by Dalkir, (2005: 18) suggests that the complete cycle of knowledge management includes:

1. Generating knowledge
2. Knowledge Sharing
3. Knowledge Applications

Figure (2-6) shows the full circle of knowledge management, where to find knowledge in the subsequent identification of the internal or the (know-how) knowledge in the organisation, or an external knowledge to be developed (Dalkir, 2005: 43).

Figure (2-6) Full circle of knowledge management

Source: Dalkir, Kimiz (2005), Knowledge Management in Theory and Practice, USA, Elsevier Buttersworth-Heinmann, p.44

In this way the model demonstrates that knowledge management is an ongoing continuous process requiring constant assessment, contextualisation and refreshing of knowledge. A further knowledge management model is offered by Omerzel, Biloslavo and Trnavcevic (2011: 112) based on four processes: knowledge generation, storage, transfer, and application.

Alavi, Kayworth and Leidner (2006: 220) propose an alternative knowledge management model that more specifically takes account of organisational values.
Their model suggests that within organisational there may be an assortment of values at work which influence individual knowledge management tool use and what is made available, knowledge management approaches, and both individual and organisational outcomes as shown in Figure (2-7):

Figure (2-7) A model of knowledge management and organisational values
Source: Alavi, Kayworth and Leidner (2006: 220)

Akin to the work of Allameh (2011), Lawson (2003) combined three different knowledge management models' processes and presented a new model. In this model, the knowledge management cycle is divided into 6 different processes:

1. Knowledge creation
2. Knowledge capture
3. Knowledge organisation
4. Knowledge storage
5. Knowledge dissemination
6. Knowledge application

In his study, Lawson used an employee questionnaire based around these key processes to measure and evaluate knowledge management in organisations.

A further model was proposed by Chan and Chao (2008) which represents the infrastructure capability taking account of technology, structure and culture, in amongst the knowledge processes of acquisition, conversion, application and protection. This model is illustrated in Figure (2-8):

Figure (2-8) Unified Knowledge Management Model
Source: Chan and Chao (2008).

2.3.8 Knowledge Management and Jordan

Jordan is a relatively small Arab kingdom in the Middle East with a population of around six and a half million people. In terms of the national culture, religion and tradition do play an important part of daily life, but it is also a relatively secular society. Jordan has a young age demography in its population where the median age is estimated to be around 23 years old (Library of Congress, 2006: 8).

As a result of globalisation and increased competition, with the liberalisation movement of global trade, and the removal of border barriers to the movement of goods, services, and capital between different world countries, Jordan has been forced to reconsider its social and economic status and there has been an increasing interest in developing and implementing knowledge management systems (Almarabeh, 2011: 4).

This interest has been enhanced after King Abdullah II introduced a new and highly prestigious innovation award for organisations who were able to demonstrate excellence in what they do, forcing many to rethink their approaches to knowledge and the management of it to ensure they succeed (Jennex, 2011: 348).

However, a number of barriers have been identified for Jordanian organisations which are linked with culture. Almarabeh (2011: 7) suggests that there is a power culture in many Arab organisations with management practices being reflected in hierarchical and bureaucratic structures and a generally patriarchal approach where creativity is not supported or original thinking not encouraged. This clearly poses a challenge for the implementation of knowledge management practices.

2.4 Culture

Ibn Manzoor, in the dictionary of Lesan Al-Arab (*The Arab Tongue, Arabic recourse*), explained that the word culture is derived from the verb (Educate); meaning understanding something quickly, while the Oxford Dictionary sees culture as the arts and the manifestations of human intellectual achievements and developments.

According to Jawad (2000: 223), the word culture has become an indicator of the spiritual side of the human intellectual activities, and it is not just an expression of ideas and standards, but it is an expression of the manifestations of human transcendence above the level of instinct; and its success in achieving the level of values.

Taylor explains that culture is a compound that includes knowledge, beliefs, art, law, traditions, and all the habits acquired by man as a member of the society (Al Omyan, 2008: 309), and that culture reflects in general the knowledge, beliefs, shared values, behaviours and the prevailing ways of thinking in the society.

There are many different types of culture that impact on individuals, organisations and indeed societies. In its broadest level, culture can vary widely between different countries and continents with significant national differences existing in relation to things like religion and are reflected and reinforced by unique languages, rules and symbols (Cameron and Quinn, 2006:17). More specifically there can be sub cultures relating to characteristics such as gender, race and occupation that are important factors to be considered when examining culture.

2.4.1 Organisational Culture

Organisational culture refers to the system of meanings and symbols prevailed, which can be defined as the basic assumptions and values developed by a particular group; in order to adapt and deal with external and internal changes. The organisational culture has also been defined as the ideologies, philosophies, values, beliefs, assumptions, common trends, and the patterns of expectations in a certain group (Morssi, 2006: 13.)

Jones also defines the organisational culture as a set of common values and standards that regulate the interactions of the organisation's members with each other and with customers, suppliers and other individuals outside the organisation (Jones, 2004: 195), while Robbins and Judge (2009: 585) define it as the system of shared meanings held by individuals and that distinguish the organisation from other organisations.

Gupta and Govindarajan (2000: 79) define the organisational culture as a social environment that moves formal and informal expectations, specifies the types of the right people for the organisation, facilitates individuals to act without obtaining prior approvals, in addition to affecting how people interact with others inside and outside the organisation.

Organisational culture plays an important role in the survival and the success of any organisation, working as a driving force in uniting energies towards achieving common goals, and directing efforts toward innovation and then meeting the globally and locally accelerating changes (Sartawi, 2002: 4).

Organisations with high performance and high efficiency have a strong positive culture among its members, whilst in the weak organisational cultures, individuals' movements are not clearly defined.

This means it is important to work towards building a strong culture based on knowledge management so as to unify efforts that do not allow multiple disparate subcultures to emerge that could lead conflicts affecting the effectiveness and performance of the organisation (Al-Omyan, 2008: 317).

From the above review of different commentators' perspectives in the field of organisational culture, that there is a lack of agreement amongst researchers on the meaning of the term organisational culture. Morssi has declared that there are 162 definitions for the term, which reflects the diversity and the complexity of this concept (Morssi, 2006: 13). Schein (1985: 149) asserts that despite this variety of definitions, they all involve the concept of shared solutions, consensus and shared understandings. However, this is disputed by other commentators on the subject who contest the emphasis on general consensus (Alvesson, 2012: 142; Martin, 2002: 95)

Understanding culture is important because, as Schein (1999) points out, it is a set of powerful and often subconsciously operating forces. If these forces are not surfaced and understood, they may undermine any attempt to direct an organisation's efforts to implement change (Bartley, Gomibuchi and Mann, 2007: 489). Similarly, Jawad (2000: 232) argues that we cannot neglect the importance and the role of culture in the lives of the individuals, nor can also develop interpretations and hold debates about the behaviour of the individuals or the groups without the references to the dominant culture or cultures, as long as culture distinguishes between an individual and another and between one group and another; even among existing communities.

In support of this, Robbins and Judge (2009: 589) argue that the benefits organisational culture can bring to the organisation including the following:

1. Determination of the dimensions and the differences between the organisation and other organisations, giving the organisation its special identity.
2. Building the commitment of the individuals to their organisation more than other personal interests.
3. Supporting the stability of the social order: because culture works as an adhesive material the helps connecting the organisation as one unity.
4. Providing a logical mechanism for control and to guide the behaviour of the staff.

Consistent with many of the definitions outlined above, and for the purposes of this study, organisational culture is defined as a set of values, beliefs, expectations, and assumptions involving all members in the organisation and creates a general understanding about what behaviours are expected within the organisation and outside the organisation.

Organisational culture is shaped by many factors including the people in the organisation, the organisation's moral standards, by the employment rights given to employees and by the structural shape used to run the organisation. Like organisational structure, organisational culture directs and controls the different behaviours within the organisation (Allameh *et al*, 2011: 1217). In addition, organisational culture can affect how individuals' respond to different situations and their interpretation and understanding of the surrounding environment (Mavondo and Farell, 2004).

2.4.2 Organisational Culture and Knowledge Management

In the last few years, knowledge management literature has highlighted the importance of the role of cultural values on the way in which knowledge management processes are developed and applied in organisations (Donate and Guadamillas, 2010: 82), and the significant impact they can have on promoting or hindering knowledge management initiatives (Tseng, 2010: 269). Indeed, Omerzel, Biloslavo and Trnavcevic (2011: 112) argue that knowledge management cannot be discussed without considering its relation to organisational culture.

The contemporary literature does provide many examples of knowledge management success stories, however, organisations are still faced with a number of challenges and one of the most difficult of these is organisational culture (Alavi, Kayworth and Leidner, 2006: 191).

Janz and Prasarnphanich (2003: 353) propose that organisational culture is the most significant input to effective knowledge management and organisational learning in that “corporate culture determines values, beliefs, and work systems that could encourage or impede knowledge creation and sharing”.

Others commentators have reflected similar arguments to this (Kayworth and Leidner, 2003; Schultze and Boland, 2000). However, much fewer studies have systematically investigated the types of cultural values that may exist in organisations and how they may be linked with different types of knowledge management activities, technological choices and subsequent outcomes (Alavi, Kayworth and Leidner, 2006: 191).

The organisational culture reflects the environment in which decisions are made and implemented; and organisations which must be flexible, in order to find a response to the needs of the market, and possess a shared culture to promote the free flow of information and facilitate the generation of knowledge (Krmelli, 2005: 114).

De Long and Fahey (2000: 113), both found in their study of more than 50 U.S. organisations applying knowledge management approaches that the lack of understanding the organisational culture was the main constraint to the knowledge assets and its investments; and whilst managers who were interviewed understand the importance of the organisational culture in knowledge management, they find it difficult or impossible to regulate the relationship between culture and knowledge.

Their study also showed that most organisations lack the necessary culture that supports cooperation because individuals perceive knowledge as ‘personal property’ to guarantee their job security hence they do not support the sharing of knowledge, which is the most important factor of knowledge management (De Long & Fahey, 2000: 118).

Baltharzard and Cooke (2004: 8) identified in their study that a constructive organisational culture will form a positive relationship with the productivity of individuals in terms of: clarity of roles; quality of communication; appropriate regulatory; creativity; and job satisfaction which is reflected on strengthening knowledge management.

They further suggest that a negative and aggressive culture will have a detrimental impact on the productivity of individuals and their contribution to the success of knowledge management, which a view that is supported via other studies focusing on productivity, culture and knowledge management (Zheng, Yang and McLean, 2010: 763; Zack, McKeen, and Singh, 2009: 392).

Organisational culture is recognised either as a variable or as a root metaphor for conceptualizing the organisations. However, culture is the instrument that is satisfying certain needs, or it is the adaptive and regulative mechanism. Culture is also seen as contributing of the overall balance for the effectiveness of an organisation (Smircich, 1983).

Organisational culture is an important factor in facilitating effective knowledge management and can have a stimulating role by providing a suitable environment for knowledge exchange and supporting the knowledge practices (Janz and Prasamphanich, 2003). A strong culture is also needed within an organisation if employee's interaction and knowledge sharing is to be stimulated by fostering values of trust, openness and sociability (Ngoc, 2005).

The findings from various research studies suggest that collaboration, trust and incentives are three key dimensions of organisational culture (DeTienne, Dyer, Hoopes and Harris, 2004; Slater, 2004).

Other previous studies of organisational culture (Robbins & Judge, 2009: 585; Al-Qaroute, 2000: 152; Hareem, 2004: 328) identify a number of characteristics that express the essence of organisational culture, which vary from one type of organisation to another. These include:

1. Creativity and risk: encouraging staff to create and taking the risk
2. Attention to detail: employees are expected to care and to be attentive to details
3. Interest in results: the focus on results-based management
4. Attention to individuals: management's attention to its impact on individuals
5. Attention to teams work: labour organised upon teams not individuals
6. Aggressiveness: attention to the aggressive individuals
7. Stability: does not mean keeping the current status against the growth and development, but it means the continuation of the effective activities
8. Initiative individuals: the responsibility and independency of the individuals
9. Integration: how to encourage the units in the organisation to work consistently
10. Management support: is the support of the management by providing a clear communication processes and through providing assistance and support to the staff.

In relation to knowledge management, Jarrar and Zairi (2010: 8) argue that organisational culture needs to contain the following components need to be present: employees who are bright, willing and free to explore; senior management that encourages knowledge creation and use; people who are not inhibited in sharing knowledge; and people who have a positive orientation to knowledge.

Similarly, initial research on organisational values and knowledge management suggests that organisational values are important to facilitate effective knowledge sharing practices among employees (Barrett, Capplemann, Shoib and Walsham, 2004; Janz and Prasarnphanich, 2003). Organisations with more open and supportive value orientations are predisposed toward constructive knowledge behaviours such as employees sharing insights with their peers (Alavi, Kayworth, and Leidner, 2006: 196).

A study focusing on whether competitive advantage can been gained for Jordanian organisations through knowledge management conducted by Hijazi (2005), found that organisational culture was one of the main factors affecting the implementation of knowledge management initiatives.

Similarly, a study conducted by Claudette and Mujtaba (2007) of knowledge management practices within North American companies, found that organisational culture should foster the concept that knowledge management is the tool to support an organisation's strategic plan and that organisational culture is critical to the success of knowledge management practices in order to achieve competitive advantage.

In contrast to the above evidence, however, Omerzel, Biloslavo, Trnavcevic (2011: 134) found in their study of culture in higher education institutions, that there were not any significant correlations between certain types of organisational culture and knowledge management processes. Instead they found linkages between different sub cultures and knowledge management in the organisation.

2.4.3 Building the Organisational Culture

A key question that stands out when raising the issue of organisational culture is 'where does it come from'? A proposed response to this question is given through exploring the development of the organisational culture through the interaction of four factors as outlined by Jones (2004: 205):

1. Characteristics of individuals in the organisation: where they represent the main source of its organisational culture; and to find out why different cultures between different organisations as it can be seen in its members; for that the organisation attracts, chooses, and keeps individuals with values and ethics, which will converge over time with the culture of the organisation and, therefore, those who do not cooperate with these values will leave the organisation.

2. Organisational ethics: many of the organisation values are derived from personality of the founder, and from the top management, these values represent the ethics of the organisation which are the beliefs and the rules that show the appropriate way to deal both inside and outside the organisation.

3. Property rights: these rights contribute in giving the individuals of the organisation the ability to shape the values of the organisational culture, where these rights cause the development of standards, values, and attitudes towards the organisation.

4. Organisational structure: The different organisational structures between organisations will cause different organisational cultures.

This is illustrated in Figure 2-9 below:

Figure (2-9) From where does the organisational culture come?
Source: Jones, R. G. (2004). Organisational theory: Design and change, 4th ed., New Jersey: Prentice Hall, p.207

2.4.4 Maintaining Organisational Culture and Use of Incentives

After building the culture of the organisation, it must be maintained and consolidated; through good management of human resources and through the responsible selection of the staff, and by developing good criteria for the performance evaluating system, and also by development, training and promotion procedures (Robbins & Judge, 2009: 593), thus, the maintaining of the organisational culture will be through these three main forces:

- Selection Process: The final decision for choosing the individuals must be of the candidates with values corresponding to the values of the organisation, and those who have the ability to adapt to the values of the organisation

- Top management: the behaviours and actions of seniors have a significant impact on the organisational culture through the formation of the values; executives in any organisation do set out these values, such as: the risk factors, uniforms, promotions and bonuses

- Social adjustment: the organisation must help new employees to adapt to the culture.

Other studies have suggested that there are eight resources - at least – for the sustainability or maintenance of organisational culture in the successful and powerful organisations (Morssi: 2006: 25), as listed in Table (2-3) as follows:

Table (2-3) Organisational Culture Resources

This table has been removed

Source: Morssi, Jamal al-Din (2006), Organisational culture, management and change, University House, Alexandria, Egypt, p. 25.

A study conducted by Palanisamy (2008) focused on the relationship between the organisational culture and the four groups of knowledge processes (creation, storage and retrieval, transfer, application) in America.

The results showed how that the organisational culture affected the four groups for knowledge processes in the context of the organisation resources planning applications, and stressed the importance of motivating the employees to work on the knowledge creation, transfer and implementation. It concluded that incentives systems are key factors in maintaining organisational culture.

This is further supported by Kulkarni *et al* (2007) who in their study of 150 knowledge workers from across different organisations found confirming the importance of the effective role of leadership in knowledge management, and in parallel with the importance of technology and the incentives systems to support the use and the sharing of knowledge.

Another factor identified in the current literature around sustaining and maintaining organisational culture was around the use of incentives and rewards. It is argued by some that reward systems can create channels through which knowledge can flow and be accessible. Organisations reward systems as can support knowledge management activities (Allameh *et al*, 2011).

Tangible and intangible rewards are all integral parts of knowledge management process and can be used to encourage and facilitate employees to share knowledge, and is an important structural factor impacting on the behaviour of individuals and their personal decisions around the generation and sharing of knowledge (Hurley and Green, 2005).

Motivating users of any knowledge management system to ensure they contribute their knowledge to the system is fundamental to the success of the overall knowledge management initiative (King, Marks and McCoy, 2002: 93). However, Muller, Spiliopoulou and Lenz (2005: 1) argue that motivating employees is addressed by many organisations through the use of incentive systems that are connected to their knowledge-sharing activities.

They propose, however, that the challenge of creating appropriate incentive systems is becoming increasing difficult for companies, especially for those which are internationally distributed and who operate in a variety of countries and cultures.

2.4.5 Changing the Organisational Culture

Organisational culture consists of relatively static properties rooted over many years. This does not mean that organisational culture can never be changed but it can be a very difficult process, and the response of individuals to change becomes possible in the following cases: very strong crises, change of leadership, new and small organisations, and weak culture. Sometimes it is necessary to change the organisational culture to serve the change in the strategies and goals.

Managers, when trying to change the culture of the organisation, must change the assumptions, fundamentals, and beliefs among individuals; there are four ways to contribute in changing the organisational culture:

1. Management is a pioneer work: the management clear vision; in supporting values and beliefs, is one of the most important methods used to change and develop the organisational culture.

2. Data exchange: The information exchanged between members of the organisation is one of the most important elements for the formation of the organisational culture, so when the individual feels the interest of the others by providing him with information, he will feel the strong social ties, thus the differing interpretations will be reduced.

3. Returns and bonuses: returns mean respect, appreciation and acceptance of the individual for increasing the loyalty and the belonging to the organisation.

2.5 Chapter Summary

This chapter has provided a critical review of the current literature and studies relating to knowledge management and has dealt with the concept of organisational culture and how it is configured and inter-relates with, and impacts upon, knowledge management practices.

This chapter has also discussed the aforementioned concepts of knowledge and its importance, characteristics and classifications together with the concept and importance of knowledge management and the differences between the roles of information management and knowledge management (and its concepts and operations).

Significant contributions have been made from the former studies examined in this review and the future direction of knowledge management in the context of the study organisation has been made clearer, because knowledge is an important element within all competitive organisations. All types of knowledge and its management, and the interrelationship between knowledge (tacit or explicit), data (raw information) and information (processed data) have been explored.

The literature review identified that knowledge can be understood from a range of perspectives (2.2.1) in an organisational context, and that it has a number of distinct characteristics (2.2.2) and types. It also identified the role of individuals in the key stages of knowledge creation and transfer (2.2.3) and some of the barriers to effectively implementing knowledge management in an organisation. Defining what is meant by knowledge management was another key feature of the literature review (2.3.1) and was found to be a much debated concept, along with the importance of knowledge management to organisations (2.3.2).

The review identified some key themes in the current literature which impact on knowledge management practices including organisational structure, leadership and information systems.

These were therefore identified as key in moving forward to develop a proposed Knowledge Management Structural Model. Issues around culture (2.4) were also widely emerged from the literature review identifying key aspects to incorporate into the Model, and it was clear from the review that there is strong evidence to support the view that organisational culture is strongly associated with knowledge management and needs to be fully taken into account when trying to implement or change knowledge management approaches. Understanding the culture of a specific organisation, and the sub cultures that may exist, is therefore a crucial prerequisite before any new knowledge management model may be implemented.

The findings from this critical review have been the lynchpin in steering and focusing this study. Exploring and evaluating the experiences of knowledge management and culture in a range of different organisations and settings, highlighting the strengths of previous work, and acknowledging the weaknesses, helps direct a proposal for what may work best in the future and within the study organisation to form a new model for implementing knowledge management.

In particular, it has identified some key organisational cultural factors to build into the Model which including information systems such as ICT and information sharing protocols; organisational structure and the way departments interact; incentive systems to reward creativity, information sharing and innovation; operations and how things are perceived to work day to day within the organisation; personnel and the support and training provided to them and their motivations to share knowledge; and finally leadership and how this impacts on the entire culture and feel of the organisation. The key factors synthesised from the literature review are illustrated in Figure (2-10).

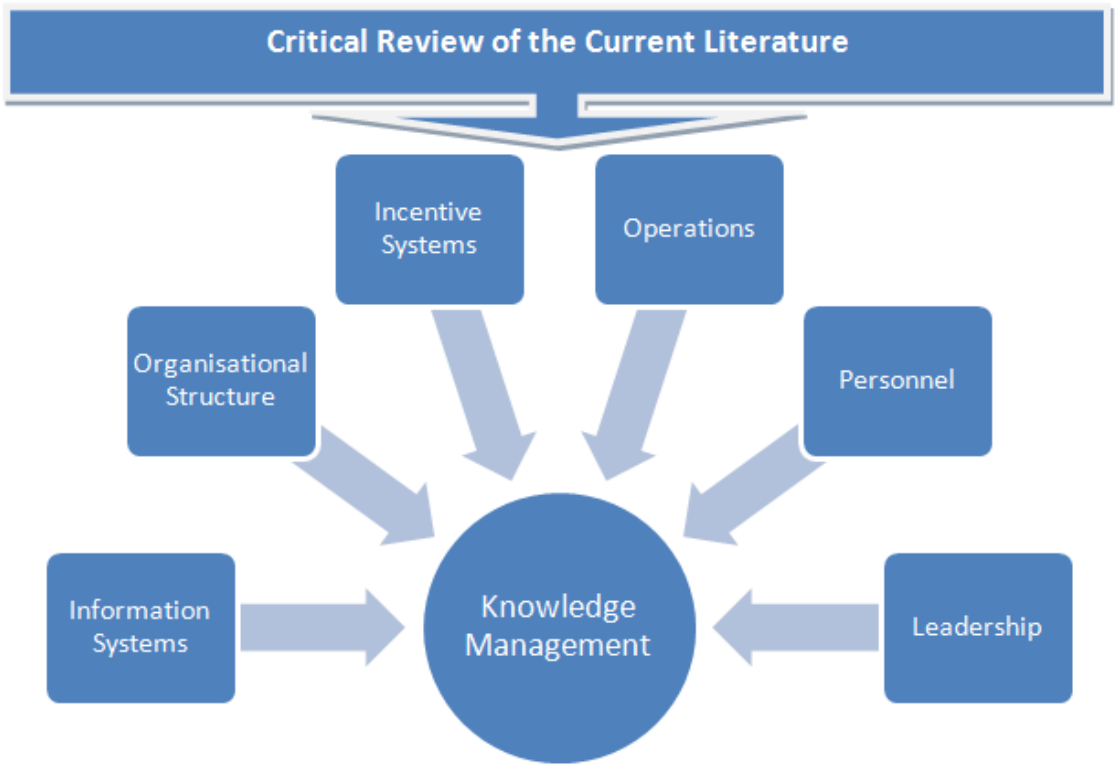


Figure (2-10) Key Organisational Cultural Factors Impacting on Knowledge Management identified in the Current Literature

Furthermore, this chapter has helped to clarify the expected contribution of this study in relation to others. It is evident that there is more limited research focusing on the experiences of knowledge management and organisational culture in countries such as Jordan where national culture is also so distinctive.

In addition, whilst various knowledge management models have been proposed from a range of authors, they often do not take full account of the impact of organisational culture. Therefore, this study will make a valuable contribution to adding to the existing body of evidence in this field.

The next chapter will outline the proposed Knowledge Management Structural Model for Jordan Telecom Group (Orange) informed by the findings from this review.

Chapter Three: Knowledge Management Structural Model

3.1 Introduction

Following on from the critical review of the literature and informed by its findings, this section outlines a proposal for a Knowledge Management Structural Model for use within the Jordan Telecom Group (Orange).

3.2 Organisational Cultural Factors

Cultural factors are the values, standards and practices that determine the behaviour of the organisation (De Long and Fahey, 2000: 116). The critical review of the literature highlighted the need for homogeneity between the organisational structure and the knowledge management structure taking account of the following:

- Structuring the knowledge management resources upon the organisational structural platform
- Developing new mind-sets allowing individuals, teams and entire organisations to adapt, grow, and plan for future challenges
- Fast-tracking capability emerging, successive information and knowledge management strategies
- Greater speed and flexibility, hence allowing the organisational structures to be able to move faster in rapid response to new changes and challenges
- New, stronger core knowledge management organisational capabilities
- Enhanced capacity to form a shared direction, position and commitment throughout the knowledge management organisation structure
- Development of not only individual capabilities, but of large numbers of individuals all growing capabilities in a leadership collective
- The development of talent and culture while implementing the knowledge management strategy
- Re-structuring organisational systems to sustain innovation

- Efficient cross-boundary work and teamwork required for dealing with complication and change
- Increased knowledge management assignation within the leadership team that connects from top up to top down from top management to employees on the shop floor
- A workplace, focused on more human attitudes while also balancing technical and operational expertise with beliefs and experience.

It is proposed that this, based on the outcomes from the literature review, can be synthesised into the following six key factors of organisational culture that support knowledge management: information systems; organisational structure; incentive systems; operations; personnel; and leadership. These factors were confirmed in a number of studies including those of Lee and Lan (2011), De Long and Fahey (2000), and Omerzel, Biloslavo and Trnavcevic (2011).

They were also confirmed by key Directors in the Jordan Telecom Group (Orange) as being appropriate and relevant for a Knowledge Management Structural Model in their management board meeting where the study proposal was discussed and approved.

These key factors encompass:

- Information Systems: a combination of technology, people and processes that facilitate the delivery of data and information throughout the organisation (Pearlson, 2001: 66).

- Organisational Structure: is the way in which the duties are classified formally through dealing with these six elements within the organisation:

    - Specialisation
    - Organisation division into departments
    - Command sequence
    - Control
    - Centralisation
    - Decentralisation

Therefore, the organisational structure is the statement by which the organisational functions identify the key roles of work and the data exchange systems (Robbins & Judge, 2009: 553).

- Incentive Systems: defined by the U.S. Centre for Productivity and Quality as stimulating internal and external factors, which affect the personal behaviour of the individual looking at the tasks as a way to get bonus.

- Operations: a mix of activities and events that work to transform inputs into outputs in the form of goods or services useful to the customers and the community.

- Personnel: all individuals who work technically or administratively in the organisation.

- Leadership: the ability to achieve the effect in a group of individuals towards achieving the overall vision and goals (Robbins & Judge, 2009: 419).

3.3 Organisational Knowledge Management Processes

The other dimension of the Knowledge Management Structural Model relates to specific knowledge management processes within the Group which are illustrated in Figure (3-1):

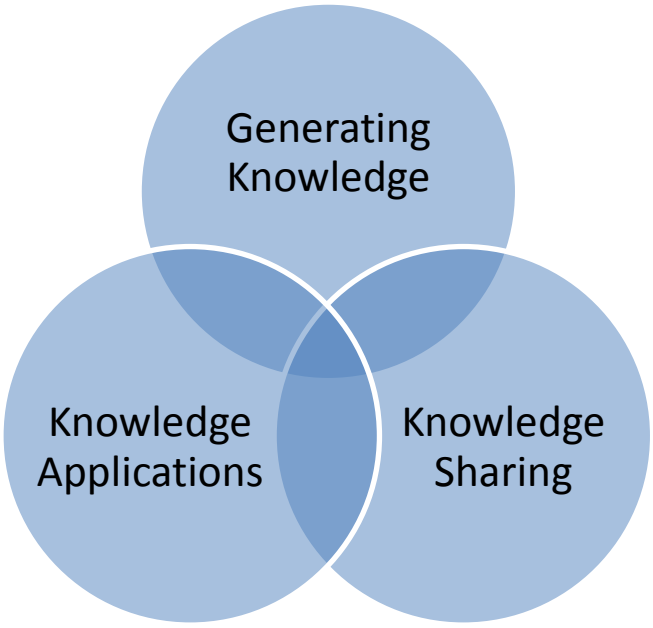


Figure (3-1) Knowledge Management Processes within the Jordan Telecom Group (Orange)

As well as being strongly featured in the current literature and review of other knowledge management models identified in the previous chapter, these key processes were identified in the Jordan Telecom Group (Orange) Strategic Plan (2012). Therefore they were chosen for inclusion in this study.

For the purpose of this Model:

- Generating knowledge: is the process of creativity and the access to new knowledge (Jashapara, 2004: 70).
- Knowledge sharing: is the process of converting and transferring knowledge to the employees in a right way and at the right time; in order to carry out essential tasks (Dalkir, 2005: 122).
- Knowledge applications: are the process of practice and the actual use of gained and generated knowledge (Dalkir, 2005: 146).

Again, these knowledge management processes were confirmed by key Directors within the Jordan Telecom Group (Orange) as being relevant and appropriate to the organisation in a management board meeting where the research proposal was discussed and endorsed.

3.4 Developing the Knowledge Management Structural Model

Having identified the key components of the Model, there was a need to consider how these would best interlink to form a functional Model for potential implementation across the Jordan Telecom Group (Orange) organisation.

Any knowledge management system in any organisation is the collection of information technologies used to facilitate this collection, then transfer and distribution of knowledge between employees, thus, the successful knowledge management systems and projects use technological “building blocks” and take a phased approach that can balance the immediate need to unify access to existing information with the long-term goal of enhancing and improving the way knowledge is managed and captured. In building the model it is important to first take a closer look at the dynamics between the identified knowledge management processes and how they feed into the organisational cultural factors.

This is illustrated in Figure (3-2):

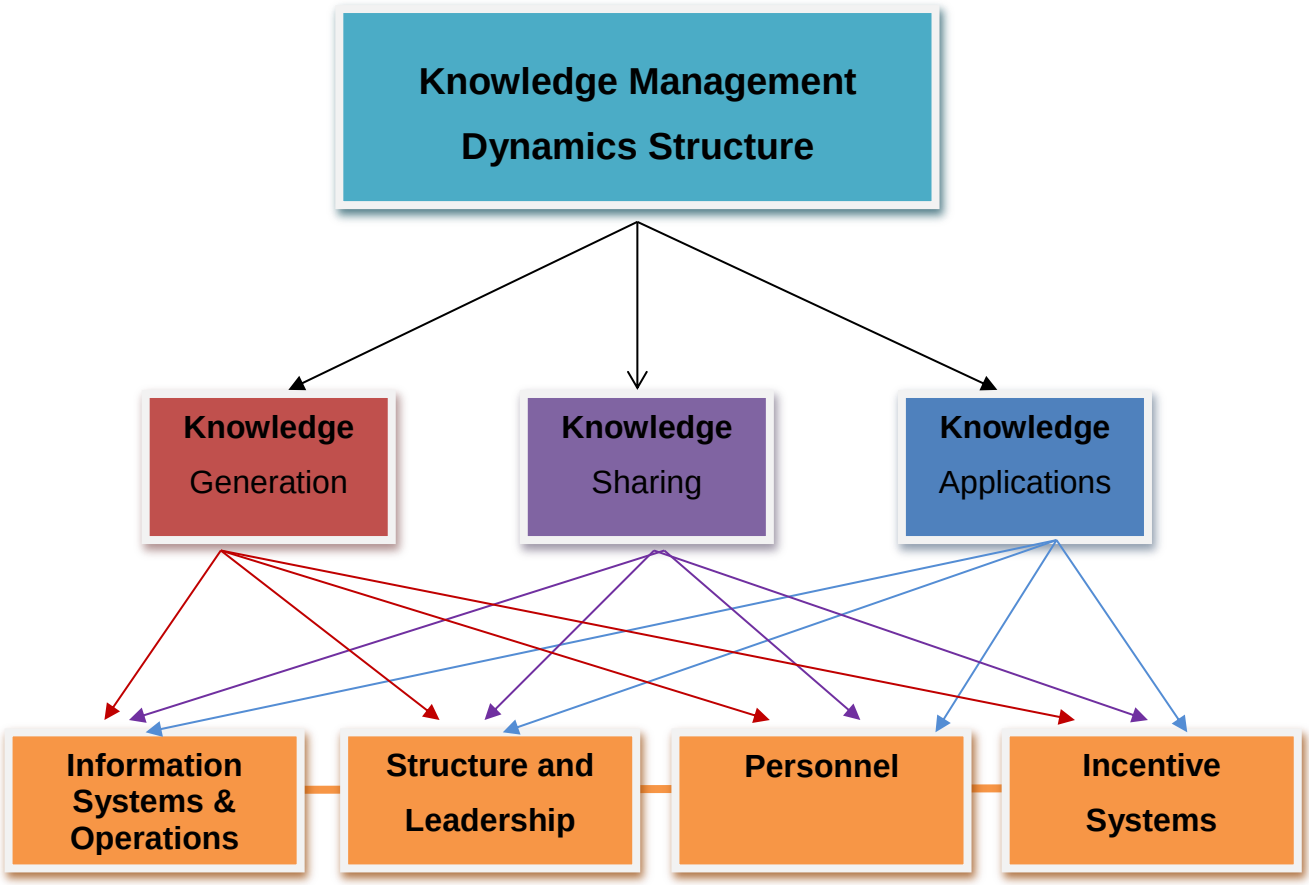


Figure (3-2) Knowledge Management Dynamics Structure

Organisational learning and the human learning processes follow analogous stages, whereby the changes in the organisational structure can then be seen as procedural learning and changes in culture as declarative learning.

It is always probable that one particular learning process will adopt a more prominent role, but in reality they will constantly interact. Individual learning procedures form the first point for organisational learning. It is then the individuals learning that provides the drivers for organisational change. The implementation of changes also then requires individual learning processes, which can include all members of the organisation, as well as specific target groups, depending on the scale of the changes. This needs to be reflected in any knowledge management framework.

3.5 Bringing the Factors Together

The identified organisational factor groupings and the identified knowledge management processes need to be merged together to see how they may interconnect and then form an appropriate and functional Knowledge Management Structural Framework for the Jordan Telecom Group (Orange).

Figure (4-3) below illustrates how these components come together, and sets out the broad outline for the proposed Knowledge Management Structural Model.

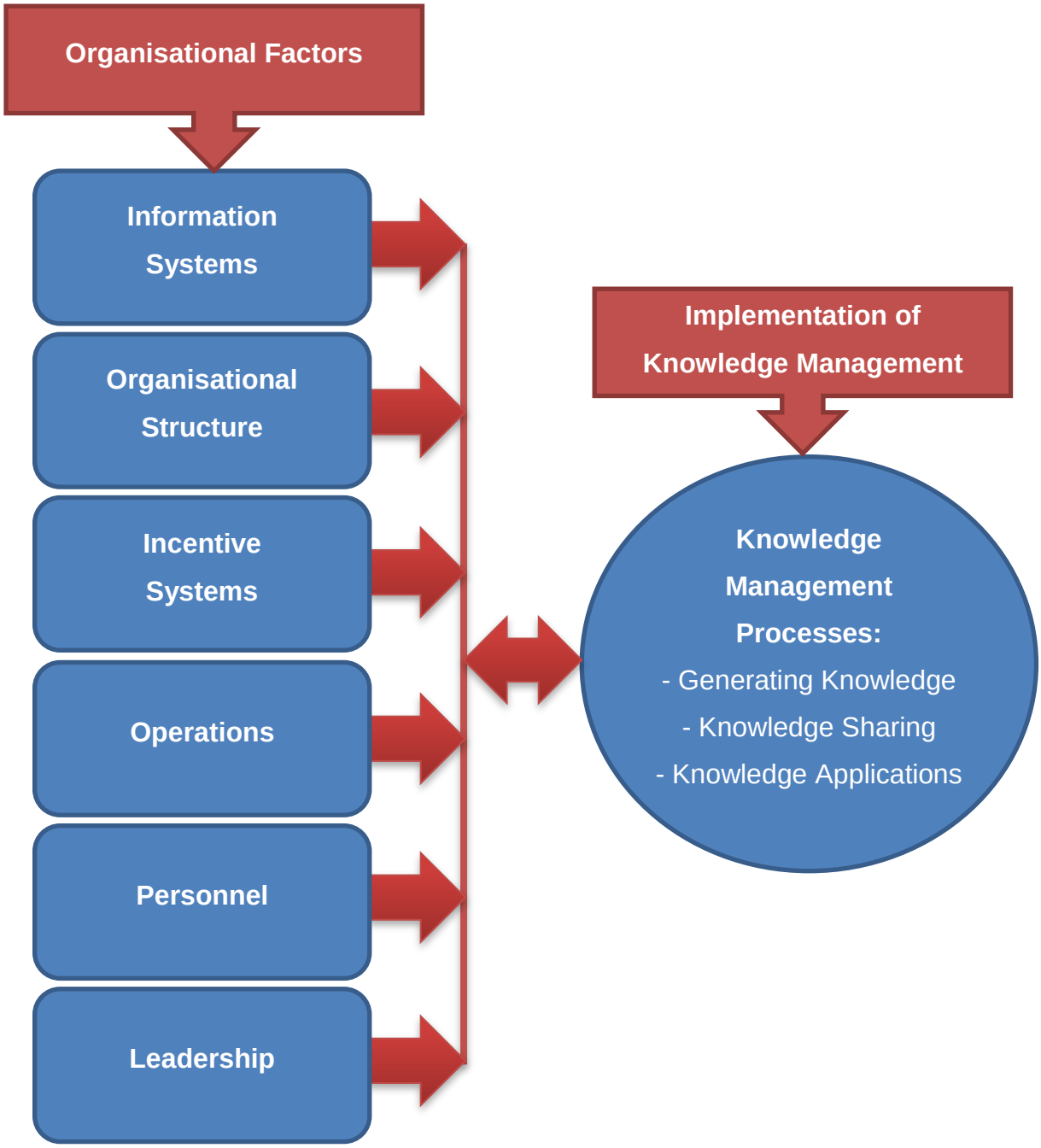


Figure (3-3) Key factors for incorporation into the Knowledge Management Structural Model for Jordan Telecom Group (Orange)

Figure (3-3) identifies each of the key identified organisational factors and their relationship with knowledge management processes. However, this diagram does not make it clear that the different factors operate within the context of the organisational structure for Jordan Telecom Group (Orange) and does not show the cyclical relationship of the knowledge management processes. In addition, it fails to make it clear about the independent nature of structure and information technology.

Therefore, Figure (3-4) has incorporated these elements. In this Model, the organisational cultural factors are set within the context of the internal Group organisational structure. This structure encompasses all of the other key factors which operate within it. The Model also demonstrates how the knowledge management processes are interdependent and are represented in a cyclical form each leading onto the other in a continuous cycle. The dashed line around the Model indicates how the process of knowledge generation, sharing and application operate both within the organisation's internal structure, but also in the external environment.

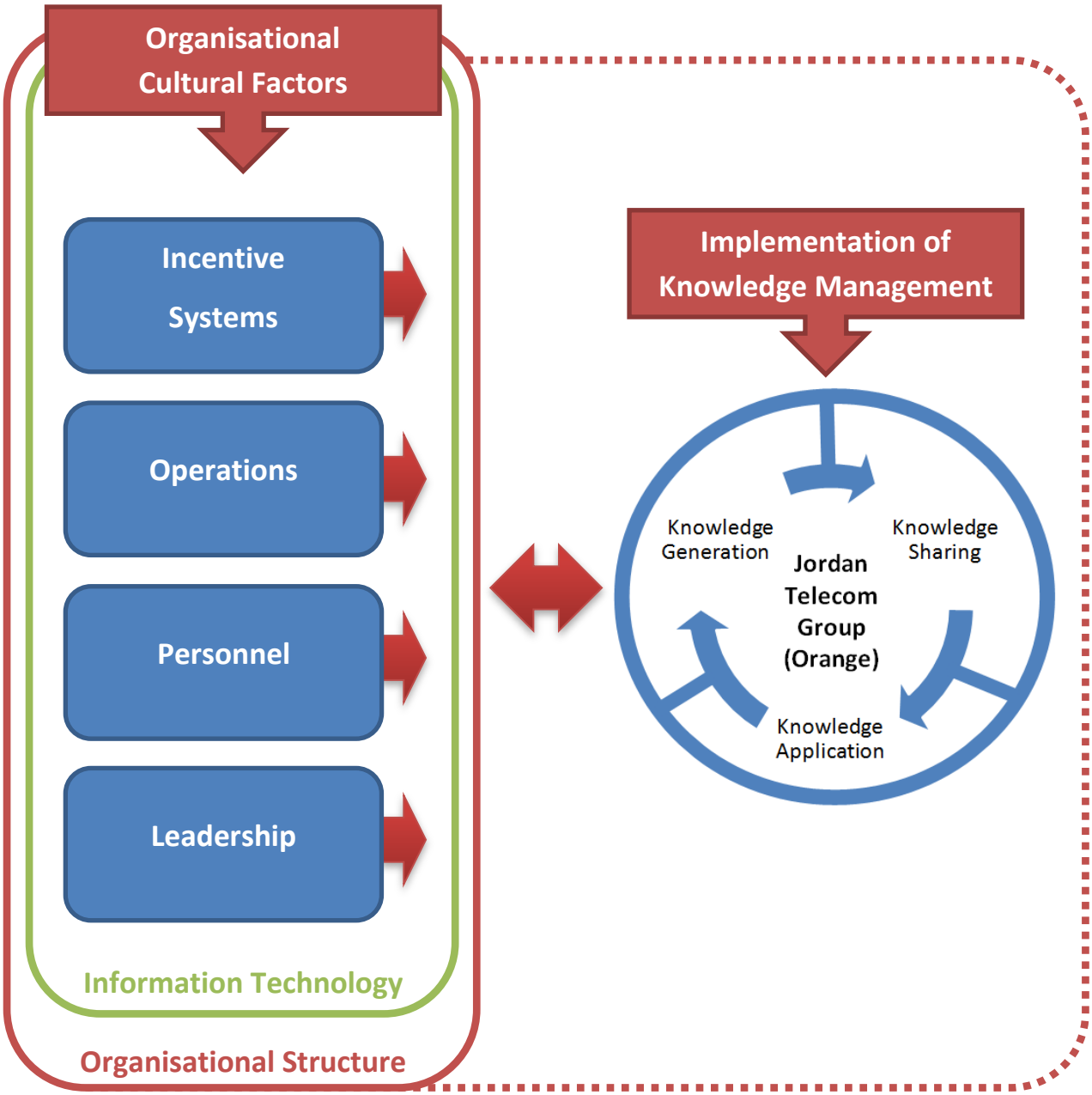


Figure (3-4) Proposed Knowledge Management Structural Model for Jordan Telecom Group (Orange)

This model outlines more specifically from the general model how the different cultural factors interplay with the key knowledge management processes in the organisation. The model could perhaps in future be expanded to take account of additional cultural factors such as trust and collaboration between teams and as the model begins to be implemented these additional factors may emerge as issues. The model takes account of the strategic perspective on knowledge management by identifying what the company Directors have confirmed as the key knowledge management processes that they consider relevant to Jordan Telecoms Group (Orange), and demonstrating the cyclical relationship between these.

3.6 Chapter Summary

This chapter has outlined the key components of the proposed Knowledge Management Structural Model for Jordan Telecom Group (Orange).

As discussed in the earlier literature review, knowledge models are useful for organisations by capturing the essential features of real systems in operation and breaking them down into more manageable parts so that they can be more easily understood and manipulated.

The proposed Knowledge Management Structural Model for the study organisation, builds on previous models giving a clearer and more specific focus on cultural factors that impact and interact with the key knowledge practices within the organisation by more clearly identifying them and their relationship to knowledge management.

Within this model, the organisational cultural factors have been identified through a critical review of the current literature around knowledge management as being key to supporting its effective implementation and were confirmed and endorsed by the senior management team of Jordan Telecom Group (Orange) as being appropriate and relevant at a management board meeting. This chapter also identifies the three fundamental knowledge management processes in operation within the Group which have been confirmed by leaders within the organisation themselves and identified in the strategic plan (2012).

The proposed Knowledge Management Structural Model illustrates how all these variables fit together to deliver a workable framework for knowledge management within the Jordan Telecom Group (Orange).

It takes account of how knowledge practices operate both internally and externally to the organisation and the cyclical and on-going nature of knowledge generation, sharing and application. It also frames the different cultural factors within the organisational structure.

The next chapter will discuss the methodologies which have selected for this study and will define the theoretical framework in which the research study is being conducted.

Chapter Four: Research Methodology

4.1 Introduction

This chapter sets out the methodological approach for this research study along with a rationale and justification for the methods used. It explains the theoretical framework in which the study will be conducted and explains what research tools will be used to collect and analyse the data required to effectively answer the research questions. This includes reference to some of the key logistical, practical and ethical components of the study.

4.2 Theoretical Framework

There are two fundamental competing schools of thought or inquiry paradigms that relate most specifically to research around knowledge and knowledge management:

- Logical positivism using the quantitative and the experimental methods to test hypothetical-deductive generalisations;
- Phenomenological (interpretive) science inquiry using the qualitative and the naturalistic approaches to inductively and holistically analyse and understand experience in context specific settings (Easterby-Smith *et al*, 2008).

Logical positivism purports to gain knowledge through the use of formal logic linked to observation (Loscalzo, 2013: 1), and phenomenology explores experience in its own terms (Smith, Flowers and Larkin, 2009: 1) it is about the study of experience from the perspective of the individual, and aims to describe rather than explain (Lester, 1999: 1). It is said to provide an inductive methodology to systematically explore the real feelings and experiences of individuals (Finlay, 2009: 15) and therefore it is well suited to this study of knowledge management and organisational culture from the perspective and experiences of the employees of Jordan Telecom Group (Orange).

A comparison between the two approaches is illustrated in Table (4-1).

Table (4-1) Key features of positivist and phenomenological paradigms
(Source: Gray, 2009: 23)

Table (4-2) compares and contrasts the strengths and weaknesses of these two research paradigms:

Table (4-2) Strengths and Weaknesses of Research Paradigms
(Amaratunga *et al*., 2002)

These tables have been removed

(Source: Elashaheb, 2005).

Having compared and contrasted the two approaches it is asserted that a phenomenological approach should be adopted. The study will aim to explore knowledge management from the perspective of the employees within Jordan Telecom Group (Orange), and seeks to gather their subjective perceptions of the organisation and it culture.

It is also concerned more with description and analysis within the specific context of the Jordan Telecom Group (Orange) organisation rather than producing generalisable results. These are all factors that are supported via a phenomenological approach.

4.3 Research Method and Analytical Approach

This study was specifically concerned with the experiences of organisational culture and knowledge management within the Jordan Telecom Group (Orange) and therefore a case study approach was adopted.

Case studies allow researchers to study complex phenomena within their contexts. Therefore, they can be a valuable method for research to construct theory, undertake evaluation or to develop interventions (Baxter and Jack, 2008: 544) and is therefore particularly suited to this study.

Case studies establish detailed relationships for the contextual analysis of a limited number of conditions or events. Many social scientists have made wide use of case studies to examine contemporary real-life situations as they provide the basis for the application of ideas and use of other methods. Yin et al (1983: 23) defines the case study research method as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used”. In a later study, Yin (1989) claims that a case study design should be considered when:

- the focus of the study is to answer “how and “why” questions
- behaviour of those involved in the study cannot be manipulated
- the researcher wants to cover contextual conditions because they believe they are relevant to the phenomenon under study, or
- the boundaries are not clear between the phenomenon and context.

These factors apply to this study.

There are a number of different types of case study. Yin (1989) and Stake (1995) offer different terms to describe a range of case studies. Yin categorises case studies as “explanatory, exploratory, or descriptive” and differentiates between single, holistic case studies and multiple-case studies. Stake identifies case studies as “intrinsic, instrumental, or collective”.

In relation to Yin's (1989) classification, this study can be described as using an 'exploratory' case study in that it is exploring the situation within Jordan Telecom Group (Orange) where the status of knowledge management is being evaluated. In terms of Stake's classifications, this study is adopting an 'intrinsic' case study in that the intent is to better understand the experience within the specific organisation and context, and the purpose is not to come to understand some abstract construct or generic phenomenon (Baxter and Jack, 2008: 548).

In order to conduct this research, a full, comprehensive and critical review of the existing literature around knowledge management and organisational culture was first undertaken. This is a crucial part of any academic research (Webster and Watson, 2002: 13). A range of sources were used and were identified via querying a wide range of quality scholarly literature databases, corporate reports, and electronic resources. The literature was then synthesized into key themes to inform the development of a knowledge management model considered suitable for the Jordan Telecom Group (Orange) (see Chapter 4).

The next stage of the research was to assess to what extent the different components of this model are embedded within the study organisation from the perspective of its employees. In order to achieve this, a mixed methodology was adopted for this research using a combination of quantitative data generated via an employee survey, and qualitative data obtained from a series of interviews with different employees within the Jordan Telecom Group (Orange). It was felt that this approach would provide the right balance of quantitative and qualitative data needed about employee perceptions to help fully answer the research questions. The linear relationship between the two approaches meant that the findings from the employee survey could inform the interviews ensuring that questions were more specifically targeted to gain a fuller and more detailed understanding of the key issues raised in the survey.

'Mixed methods' is a term describing the type of research where the researcher combines quantitative and qualitative research techniques, methods, or approaches into a single study (Jonson and Onwuegbuzie 2004:17; Flick, 2009: 32).

Mixed method approaches have received criticism from a number of commentators (Bryman, 2006; Giddings, 2006; Fielding and Fielding, 1986) who claim that:

- any differences and commonalities identified in the research may be misinterpreted due to using different data sources
- mixed methodologies are not cost effective, and
- findings are not properly integrated.

Similarly, traditionalists would argue that quantitative and qualitative approaches are simply not compatible (Sandelowski, 2000: 246).

However, there is also increasing support for the mixed method approach. Creswell and Plano Clark (2007: 5) argue that the use of both approaches together provides a better understanding of research problems than either approach used alone could achieve. The use of mixed methods also enables triangulation of the study findings to be undertaken. Triangulation is seen to increase validity (Bryman, 2006: 97) when multiple findings either confirm or confound each other and triangulation is often cited as being methodologically superior over single methodologies (Symonds and Gorard, 2011:2). In this study the findings from the employee survey could be used to inform the interviews with managers which subsequently allowed findings to be validated and more fully explored and understood.

Triangulation methods are employed to collect data in order to test the validity of the information collected for the case study, which includes the use of multiple sources of data. Case studies that adopt triangulation methods are rated more highly than those that rely on single sources of data (Yin *et al*., 1983).

In addition, a mixed method approach also allows a more comprehensive picture of the study phenomenon to be achieved (Doyle, 2009: 175). It was therefore considered to be an appropriate and effective approach for this study.

4.3.1 Survey

In order to gather the perceptions and experiences of the employees of Jordan Telecom Group (Orange), a questionnaire was constructed based around the key components of the proposed Knowledge Management Structural Model that was developed from a critical review of the existing literature in the field of knowledge management, organisational culture and the telecommunications industry (see Chapter 2).

Questionnaires are generally considered to be an effective and relatively inexpensive way of collecting data from a large number of people, however, they need to be carefully designed, formatted and tailored to the study target group (Schmidt and Brown, 2011: 220).

Increasingly, online surveys have become a popular alternative to paper based questionnaires and provide an even more economical and quick way of collecting data (Parry and Tyson, 2009: 471). However, as this survey was being issued in Arabic it was felt it was easier to continue with a paper based survey. In addition, employees of the Group are more familiar with the use of paper based questionnaires as these have been successfully employed for other studies in the organisation previously.

4.3.1.1 Structure of the Questionnaire

The questionnaire was structured around the components contained within the proposed knowledge management model (see Chapter 3) that had been informed and developed following a comprehensive review of the current literature. It was broken down into three key parts and as follows:

- Part 1: aimed to gather demographic information from the respondents and their role within the organisation to provide some context to the study findings and the respondent profile.

- Part 2: aimed to gather employee perceptions of the organisational cultural factors within the Jordan Telecom Group (Orange) and included a series of 36 statements to which they were asked to indicate their level of agreement with.

  These statements were grouped under the key components of the proposed Knowledge Management Structural Model including:

  1. Information Systems, measured in paragraphs (1-6).
  2. Organisational Structure, measured in paragraphs (7-12).
  3. Incentives Systems, measured in paragraphs (13-18).
  4. Operations, measured in paragraphs (19-24).
  5. Staff, measured in paragraphs (25-30).
  6. Leadership, measured in paragraphs (31-36).

- Part 3: aimed to assess the current status of knowledge management practices within the Group from the perspective of its employees. Again a series of statements were listed which respondents were asked to indicate their level of agreement against, and these were grouped into the following categories:

  1. Knowledge generation, measured in paragraphs (1-8).
  2. Knowledge sharing, measured in paragraphs (9-16).
  3. Knowledge application, measured in paragraphs (17-24).

A series of discussion sessions were held with different staff groups within their existing team meetings to identify how best to assess employee perceptions against the key components of the Model, and to generate questions that were meaningful and understandable to potential respondents. In addition, in order to ensure the questionnaire was suitably robust and appropriate for the Jordan Telecom Group (Orange), the researcher met with a number of Executives, department managers, and specialists in the group, discussing the objectives and purpose of the study and gaining their agreement on the content and composition of the questionnaire. The researcher also held a series of meetings with group executives to discuss the concept of knowledge management in the group and the difficulties and problems facing the effective application of knowledge management, which assisted in strengthening the design of the study.

4.3.1.2 Scaling

Each of the model's components were incorporated into the questionnaire and a five point Likert scale, ranging from 'Strongly Agree' to 'Strongly Disagree' was used to measure the extent to which employees felt each component was in place in the studied organisation.

In a study of Likert scales, Dawes (2008) found that there was no significant difference in the results produced if using a five point or seven point scale. Given this, and since previous studies in the organisation have used a five point scale and so is familiar to employees, a five point scale was also adopted for this survey.

4.3.1.3 Piloting the Questionnaire

Piloting provides valuable information and learning about the reliability and validity of the questions being asked in a questionnaire through the identification of any potential problems prior to undertaking full data collection (Draugalis, Coons and Plaza, 2008: 3). The final draft of the questionnaire was therefore first piloted with 30 employees to ensure that the questions were relevant and well defined, and that any areas of ambiguity or misunderstanding were highlighted. Employees from two teams in the Group were selected to take part in the pilot. They were asked to complete the questionnaire and also to provide their feedback on how easy it was to understanding the questions, whether the formatting enabled the questionnaire to be easily followed, and asked for any suggestions on how to improve the survey. Overall, respondents in the pilot group were positive about the content and structure of the questionnaire. A few minor re-wording of some questions resulted from the pilot exercise along with clearer instructions on what was required.

This technique can also help in eliminating unnecessary questions, and set some guidelines to ensure that:

- The design of the questionnaire is appropriate for the audience being researched
- The answers are capable of being interpreted in a meaningful way
- Any weaknesses in the questions posed are revealed.

Dillman (1978) also indicated that any pre-test or pilot survey needs to provide evidence about the following questions:

- Does each question measures what it is intended to measure?
- Are all the words understood?
- Do all respondents interpret questions similarly?
- Does each close-ended question have the answer that applies to each respondent?
- Do they create a positive impression, one that motivates people to answer?
- Are they answered correctly?
- Does the questionnaire suggest bias on part of the researcher? (Elashaheb, 2005).

The piloting exercise confirmed that the questionnaire had reached an acceptable level of confidence in the validity and reliability of the questions.

4.3.1.4 Validity of the Questionnaire

The questionnaire was subjected to validity and the reliability testing in order to ensure the capacity of the cultural statements to measure what they were developed for. The questionnaire has also been subjected to a reliability test aiming to check that the consistent results would be obtained if the survey was to be re-applied to respondents again.

The questionnaire was also reviewed by a number of faculty members of the Jordanian Universities in the same field of the research to assess the suitability of the questionnaire for achieving its desired outcome with a few minor amendments to wording being made as a result.

All suggestions were then collated resulting in some minor adjustments being made to the initial questionnaire including deleting some statements, adding in new ones and rephrasing others.

4.4.1.5 Sample for Survey

A 10% stratified sample of the Group's workforce was selected ensuring that the sample included representation from across all Group departments as informed by information supplied by the Human Resources Department. This resulted in 310 questionnaires being distributed. An analysis of the characteristics of the respondents from the sample is given in Chapter five.

4.3.1.6 The Covering Letter

In order to promote a good response to the survey, a covering letter explaining the purpose and use of the survey data accompanied the questionnaire. It provided assurances about confidentiality, explained how the results would be used and gave instructions on how to correctly complete the questionnaire.

4.3.1.7 Distribution of the Questionnaire

The questionnaire was distributed in paper form to employees and was in Arabic as the vast majority of employees did not speak English in a way that would have allowed them to answer the questions and to express their ideas clearly in English. The researcher, with the assistance of the human resources specialists of the Group, controlled the distribution and the collection of questionnaires.

The questionnaires were returned back to the researcher anonymously and were inputted into Microsoft Excel where they were analysed. Through Excel, the results could be processed and statistical conclusions drawn.

Draugalis, Coons and Plaza, (2008:1) argue that too often insufficient attention is given to the quality of the presentation of survey findings and reports, therefore careful consideration was given to this in order to ensure that the key factors pertaining to knowledge management and organisational culture could be easily identified from the final presentation of the results.

4.3.2 Interviews

May (1993: 2) describes interview techniques as one of the main research methods in the social sciences. Collis and Hussey (2009: 144) describe the use of such interviews as a method for collecting data in which participants are asked questions to find out what “they think or feel” and Blaxter, Hughes and Tight (2009: 172) note that they provide a useful technique for collecting data which would not otherwise be accessible using methods such as questionnaires.

Interviewing is an important way to collect data, and as well as to gain knowledge from individuals targeted. Kvale regarded interviews as "an interchange of views between two or more people on a topic of mutual interest, sees the centrality of human interaction for knowledge production, and emphasizes the research data" (Kvale 1996: 14).

The interviews followed on from the employee survey and the content of the questions were informed by the key issues highlighted in the survey. It was considered that a structured interview approach with a small sample of employees within Jordan Telecom Group (Orange) would provide further depth of information to be obtained about knowledge management and culture within the organisation and would enhance the quantitative data obtained from the survey.

Like the survey, interviews provide a cost effective and simple way of gathering research data (Easterby-Smith, Thorpe and Jackson, 2008: 143). Saunders, Lewis and Thornhill (2009: 356) recommend that using a structured interview schedule to keep the interview focused and clear and this approach was used to conduct the interviews for this survey.

Therefore, structured interview techniques were adopted to collect data from the interviewees. McCracken (1988) supports the use of this method and he also discusses how during an interview a deeper meaning of the issues being researched can be obtained. This is because a structured interview allows the person being interviewed to discuss issues from the past as well as the present and the future.

This technique gives the researcher a broader timeline and more in-depth answers than a basic survey-type structure.

Because of the depth of the structured interview, often to the benefit of the researcher, secondary questions may arise, which the researcher can then explore. The flexibility of this method can only enhance the breadth of knowledge and information gained by the researcher.

4.3.2.1 Sample for Interviews

In determining who to interview, there were two key issues to consider. The first was deciding what kind of people to interview; naming it as the target population group. When researchers conduct a survey measuring the employee attitude the target population is clearly obvious, but if a researcher is attempting to determine the likely success of a product, the target population may be less obvious. However, determining the target population is extremely important, because if the right people are not interviewed, the research will not successfully meet its goals. Secondly, is to decide is how many people need to be interviewed. A small, representative sample will reflect the group from which it is drawn. The larger the sample, the more precisely it reflects the target group, however, the rate of improvement in the precision decreases as the sample size increases.

For this study, it was decided that a cross section of staff from across the organisation's key departments should be approached and invited to be interviewed. It was felt that this would provide feedback from a range of different perspectives. The Human Resources department provided a list of the different service areas and respective numbers of staff within each one. An email was sent out to staff from these areas informing them about the study and asking for people to come forward to participate in an interview. From those expressing an interest, the researcher selected a sample that reflected the range of services areas and functions within the organisation.

4.3.3 Ethical Considerations

In relation to this study there are a number of ethical considerations to take account of. The main consideration is around informed consent and confidentiality. When conducting surveys it is important that the participants are informed about the rationale and purpose of the survey first and are told how the results will be used and how confidentiality of the data will be assured (Gilbert, 2001).

The covering letter accompanying the questionnaire addressed all of these issues. In addition, those taking part in the interviews were first fully briefed about the purpose of the interview before obtaining their agreement to take part.

In addition, a key element of informed consent is that the participant should feel free to withdraw at any point (Evans, Elford and Wiggins, 2008: 328). With the questionnaire survey this was relatively straight forward as they could choose whether or not to complete the survey in private. For interviewees, they were reassured before the interview that they could withdraw at any point and gave consent both verbally and by signing a declaration that the interview could be recorded.

4.4 Chapter Summary

This chapter has outlined the chosen research methodology for this study and has discussed and justified the rationale for this. It has explored the theoretical framework in which the study will be conducted and identified some of the practical considerations around the effective implementation of the research tools.

The next chapter explores the findings from the survey of employees to gather their experiences and perceptions of to what extent the different organisational cultural factors identified in the proposed Model are embedded within the Jordan Telecom Group (Orange) and how they and correlate to the identified knowledge management processes in operation in the Group. This will then help the organisation know where to focus its attention and efforts to improve and strengthen knowledge management within the Group and therefore potentially gain competitive advantage within the industry.

Chapter Five: Survey Findings

5.1 Introduction

This chapter presents the overall results and statistical analysis from the quantitative employee survey. It builds on from Chapter two explaining how the survey was developed and implemented as well as detailing the key findings.

5.2 Questionnaire Development

As explained in Chapter three, the questions used in the employee survey were informed by the findings from the literature review. The review had highlighted some key areas relating to organisational culture that were most closely associated with effective knowledge management. The questionnaire was therefore grouped under these key areas and questions to test the relevance of them to the Jordan Telecom Group (Orange), from an employee perspective, were developed. Initially the questions were generated from a series of discussion sessions with employees at their team meetings where different questions and approaches to asking them were debated. This process produced lots of useful suggestions for how to assess each cultural area in a useful and appropriate way.

The draft questionnaire was also sent to the senior management team for approval. It was then formally piloted with 30 employees, as described in Chapter two, to assess if the questions were clear, unambiguous and relevant.

5.3 Questionnaire Validity

To assess the reliability of the questionnaire, the researcher used the internal consistency coefficient (α) according to the alpha Cronbach equation (Ritter, 2010), and the value of (α) 97%, which is very high when compared with the minimum acceptable rate of 60%.

The reliability of the study tool was tested on a sample of twenty employees, then reapplying after 15 days on the same sample, by which the Pearson correlation coefficient (Brysbaert, 2011) was extracted showing a result of 0.921 which indicates a high degree of reliability. These employees were excluded from the sample in the distribution of the questionnaires later.

Table (5-1) details the results from the application of the reliability test to the different variables in the questionnaire:

Table (5-1) Results of the alpha Cronbach Reliability for the dependent and independent variables

Variable	Reliability Coefficient
Information Systems	83.7
Organisational Structure	86.1
Incentives	89.4
Personnel	89.3
Operations	88.7
Leadership	88.9
Total organisational culture factors (Independent variable)	95.0
The implementation of knowledge management (dependent variable)	96.0

5.4 Survey Results

Understanding the organisational cultural factors affecting the implementation of knowledge management, acts as a basis in determining the type of knowledge management strategies and initiatives for an organisation (Rašul, Vuksic, and Stemberger, 2012).

This chapter provides a statistical analysis of the data generated from the employee survey in relation to each of the key components of the proposed Knowledge Management Structural Model.

The first question to the study sought to answer was to understand how employees perceived the cultural climate of the organisation in relation to what extent they felt that different aspects of culture were embedded throughout the organisation.

In order to measure this, employees were asked to indicate to what extent they agreed with the different component statements derived from the Knowledge Management Structural Model. In order to gather an indication of which components were most strongly agreed with, the arithmetic mean and standard deviation were used to compare and contrast each statement.

The mean is the average of a set of numbers and is the most important measure of central tendency (Ley, 2007: 10). In the survey a five point Likert scale was used against which respondents could identify their level of agreement with each component statement.

The scores allocated against each level of agreement were:

5 Strongly Agree
4 Agree
3 Neither Agree nor Disagree
2 Disagree
1 Strongly Disagree

Therefore, the higher the mean score against each component statement, the stronger the level of agreement. It can be asserted that:

- If the arithmetic mean is 4-5, this means strongly agree
- If the arithmetic mean is 3-4, this means agree
- If the arithmetic mean is less than 3, this means disagree

The standard deviation is used to measure variance around the mean. It is the square root of the sum of the squared differences between each score and the mean average of all scores.

The smaller the standard deviation, the more concentrated the data, and the higher the validity of the mean as a measure of agreement. It was therefore felt important to calculate this alongside the mean scores to identify what component factors in the knowledge management model were most significant to employees and the organisation.

5.4.1 Response Rate

In total 310 questionnaires were sent out to employees and 252 were completed and returned for analysis giving a positive response rate of 81%.

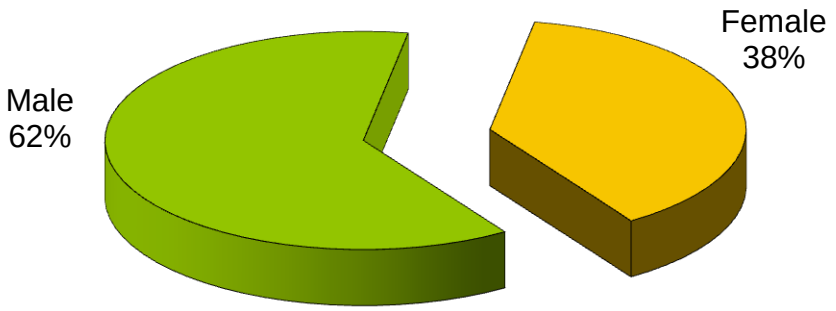
No 'gold standard' for what is considered to be an acceptable response rate exists (Cummings, Savitz and Konrad, 2001: 1348), and although many researchers have asserted what they consider to be an acceptable rate, these are based on a balance of rational and political considerations of acceptability (Nulty, 2008: 307) rather than with any reference to any theoretical justification. What perhaps is more important is what the data from the survey is to be used for (Nulty, 2008: 306). However, in this study, the response rate was very high, so this was a positive outcome.

5.4.2 Profile of Respondents

It was considered important to capture key demographic information about the respondents as this may have a bearing on their experiences and perceptions of knowledge management within the organisation including factors such as gender, age and level of experience. The first part of the questionnaire gathered this data and the results are presented below.

5.4.2.1 The Study Sample by Gender

Of the 252 respondents to this survey, the majority were male as shown in Figure (5-1). These results are in line with the Jordanian society - like other Arab societies – Jordan is a patriarchal society, a fact that is still reflected in the employment process and in the selection process for leading positions in various Arab organisations.

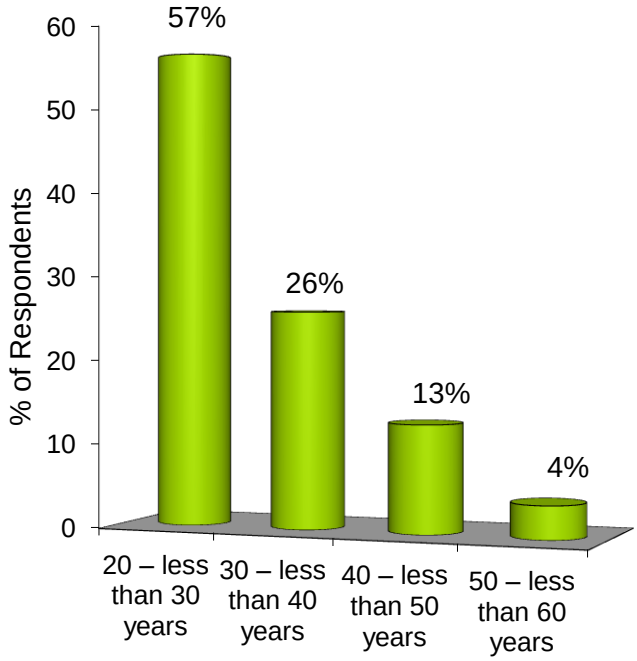


Number of respondents = 252

Figure (5-1) Gender Profile of Respondents

5.4.2.2 The Study Sample by Age

The data presented in Figure (5-2) illustrates the distribution of the study sample by age group. The majority of respondents are from the age group 20 years - less than 30 years old (57.1% (144)) whilst the lowest proportion are from the age group 50 to less than 60 years (4% (10)). There were no respondents older than 60 years old.



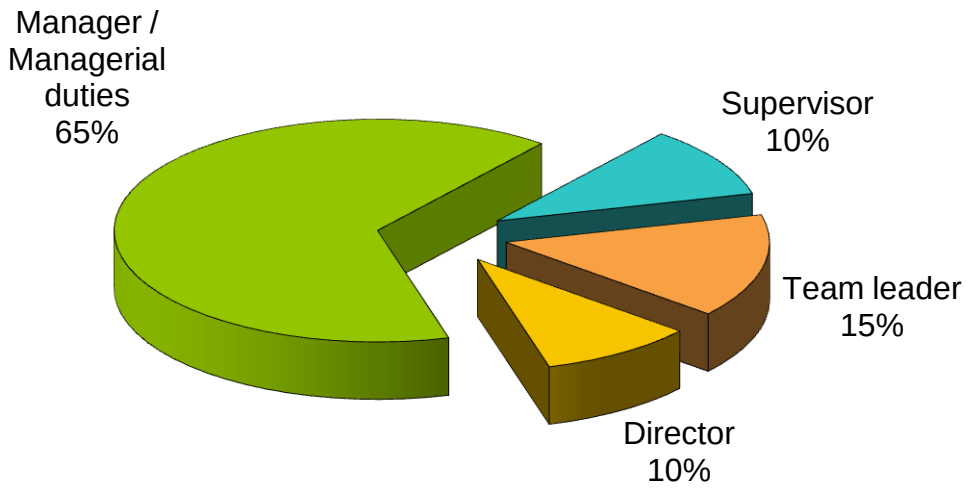
Number of respondents = 252

Figure (5-2) Age Profile of Respondents

The proportion of younger employees aged 40 and under reaches 83%, a result which is in line with the demographic profile of the Jordanian society as whole. There is a general perception that younger people are likely to have a desire or capacity to embrace the concept of knowledge management (Jarrahi and Sawyer, 2013: 123), which may mean that age demographics of the respondents may lead to more positive findings. However, studies have shown that this is not necessarily the case with younger workers and that older workers, face age discrimination at work (Redman and Snape, 2006: 167), and that they are misunderstood, ignored and vulnerable to the effects of age-related stereotyping (Loretto, Vickerstaff and White, 2007) such as this.

5.4.2.3 The Study Sample by Job Title

The data presented in Figure (5-3) illustrates the distribution of the study sample by the job title; showing that majority of the respondents indicating that they are working within a role of manager (65%). Again it was felt that perceptions of the importance or relevance of knowledge management may differ depending on the type of role individuals have.



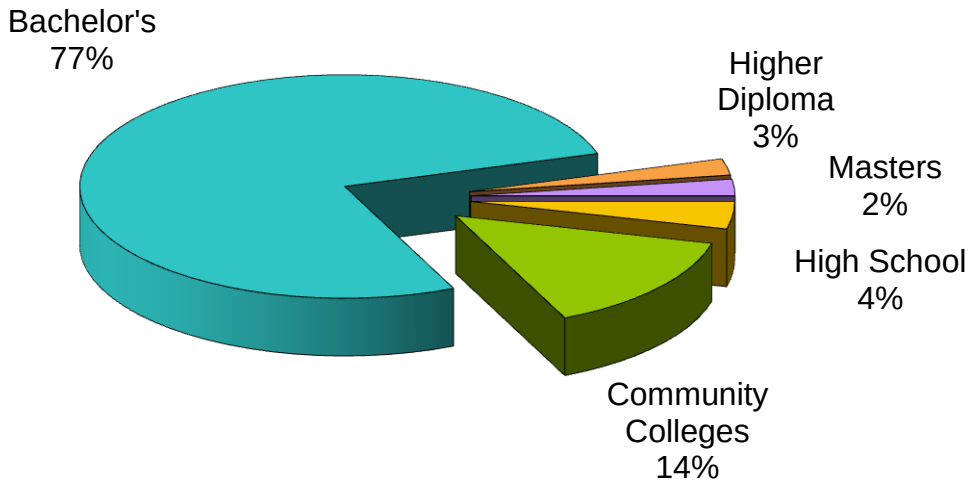
Number of respondents = 252

Figure (5-3) Relative distribution of the study sample by the Job Title

5.4.2.4 The Study Sample by Educational / Training Status

The data presented in Figure (5-4) reflects the distribution of the study sample by education (proportion of employees who have attained a degree). This was distributed among five categories, where the majority of the respondents were holding the Bachelor's degree reaching (77% (194 individuals)).

The results show that the percentage of the Bachelor's and Master's degree holders are 79.4% of the study sample, which may mean these employees are more likely to be amenable to promoting and implementing knowledge management processes, or make them more effective at knowledge sharing (Sveiby and Simons, 2002: 420).



Number of respondents = 252

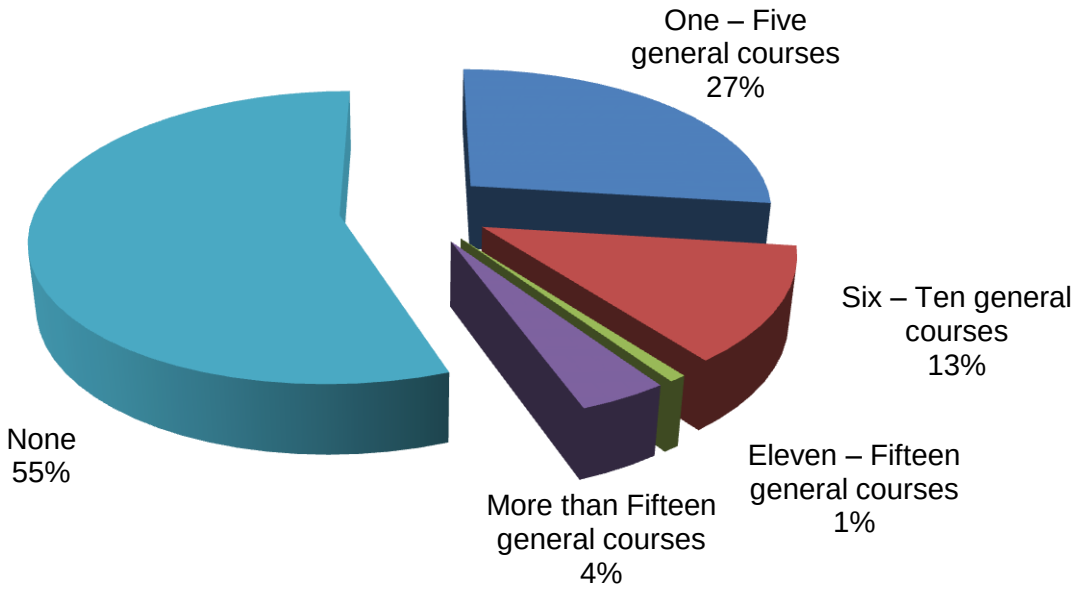
Figure (5-4) Education Profile of Respondents

Respondents were also asked to indicate what additional training they had received and were asked about the number of courses they had participated in within their role. Again, potentially the level of additional training a person has had may have an impact on their perceptions and experiences of knowledge management. The data presented in Table (5-2) reflects the distribution of the study sample by the number of general courses in which the employees participated in, with over half indicating they had not attended any courses.

Table (5-2) Relative distribution of the study sample members by the number of general courses

Number of General Courses	Frequency	Percentage
One – Five general courses	68	26.98%
Six – Ten general courses	32	12.7%
Eleven – Fifteen general courses	2	0.79%
More than Fifteen general courses	10	3.97%
None	140	55.56%
Total	252	100%

Respondents were then asked if they had attended any specialised knowledge courses. The results indicated that a small proportion had participated in quite extensive specialist knowledge courses, but most respondents had not participated in any such training, as shown in Figure (5-5):



Number of respondents = 252

Figure (5-5) Relative distribution of the study sample members by the number of specialised knowledge courses

5.4.2.5 The Study Sample by Length of Employment in the Company

Similarly, the duration of employment within an organisation may have an influence on employee perceptions of organisational culture and understanding of how systems and processes work.

The data presented in Table (5-3) reflects the distribution of the study sample by the duration of employment in the current company (Orange). Over a third of respondents had been employed within the company for over 7 years (36%) and the number with less than one year's experience equated to only 14% of the respondents.

In highlighting the importance of these results is the fact that the largest percentage of the study sample are the employees with the working duration of more than seven years; which means a larger understanding of the prevailing organisational culture, besides the increased accumulative knowledge, experiences, skills and practices; which helps in enhancing the knowledge management implementation processes.
The results also indicate the presence of functional stability, which helps in the consolidation of the organisational culture and the cumulative knowledge transfer to other company members.

Table (5-3) Relative distribution of the study sample members by the duration of employment in the current company

Duration	Frequency	Percentage
Less than one year	34	13.5%
One year – less than two years	58	23%
Two years – less than four years	46	18.3%
Four years – less than seven years	24	9.5%
More than seven years	90	35.7%
Total	252	100%

5.4.2.6 The Study Sample by Previous Employment

The data presented in Table (5-4) reflects the distribution of the study sample by number of previous companies and organisations they have worked for. Again, experience in other organisations can influence employee perceptions about organisational culture and allows them something to compare their experiences against. Most of the employees in this study had no previous work experience (42%). Given the high proportion of young people in the organisation, this is perhaps not surprising.

Table (5-4) Relative distribution of the study sample members by the number of previous companies and organisations they worked in

Number of Companies	Frequency	Percentage
None	106	42.1%
One Company	70	27.8%
Two Companies	50	19.8%
Three Companies	18	7.1%
Four or More	8	3.2%
Total	252	100%

In addition to this, respondents were asked to indicate how many years' experience they had working in other companies. Table (5-5) illustrates the level of experience respondents indicated they had. In line with the other findings, most indicated they had little or no previous experience.

Table (5-5) Relative distribution of the study sample members by the years of experience in other organisations outside of Jordan Telecom Communications

Age	Frequency	Percentage
None	118	46.8%
One year – less than two years	64	25.4%
Two years – less than four years	36	14.3%
Four years – less than eight years	22	8.7%
More than eight years	12	4.8%
Total	252	100%

5.4.3 Summary of the Study Sample Characteristics

The previous findings confirm that the profile of respondents is characterised in the following ways:

- Majority of respondents are male
- High proportion of younger people in the sample
- Most have some formal academic qualifications
- Most have no previous experience or limited experience of working in other companies
- Most have not undertaken any specialised knowledge management training, although a significant few had undertaken more extensive training.

5.4.4 Employee Perceptions of Organisational Factors

The second section of the questionnaire aimed to measure employee perceptions of the impact of the organisational cultural factors identified in the proposed Knowledge Management Structural Model (Chapter 4) including:

- Information Systems
- Organisational Structure
- Incentive Systems
- Operations
- Personnel
- Leadership

This analysis aimed to identify which components of the Knowledge Management Structural Model employees felt were embedded in the organisation.

5.4.4.1 Information Systems

Respondents were asked to indicate to what extent they agreed with a series of statements relating to the impact of information systems in the organisation.

The results identifying the arithmetic mean and standard deviation against each information system statement are illustrated in Table (5-6) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-6) Mean and Standard Deviation Against Each Statement: Information Systems

Information Systems Statement		Arithmetic Mean	Standard Deviation	Rank
1.	Information systems provide detailed and clear data that helps in spreading the culture of learning	3.91	0.758	4
2.	Databases facilitate the process of using the information systems by the staff	3.93	0.727	3
3.	The information systems contribute in the development of the practices helping the company to adapt any new knowledge	4.02	0.803	1
4.	Strengthening the shared beliefs among the staff through the effective role of the knowledge management efforts	3.98	0.703	2
5.	Information systems contribute in strengthening the common assumptions about the importance of creativity and innovation	3.69	0.762	6
6.	Information systems support the common standards related to the transfer of knowledge within the company	3.84	0.851	5
Overall:		**3.90**	**0.767**	

From Table (5-6) it is clear that overall, there was a relatively high level of agreement amongst respondents relating to the information systems statements. In particular, respondents appeared to recognise the importance of information systems and how they can support a consistent approach to knowledge transfer throughout the organisation and that they have a role in strengthening shared beliefs amongst staff thereby impacting on the organisational culture.

There was less agreement around the contribution information systems have in strengthening assumptions around the importance of creativity and innovation.
Overall, the general average of the arithmetic mean for the answers of the respondents is equivalent to (3.90) and the standard deviation is equivalent to (0.767), which indicates the approval of the respondents upon the scale of these paragraphs was high, and that their attitudes were positive.

These findings are consistent with the strategic objectives of Jordan Telecom Group (Orange).

As one of the leading telecommunications companies in the country, it has had a continued interest in the development and expansion of information and communication technology as a prerequisite to keep up with developments successive locally and internationally, in order to survive in the market and to continue competing in the telecommunications sector.

5.4.4.2 Organisational Structure

Respondents were asked to indicate to what extent they agreed with a series of statements relating to the impact of organisational structure on knowledge flow and transfer. The results identifying the arithmetic mean and standard deviation against each organisational structure statement are illustrated in Table (5-7) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-7) Mean and Standard Deviation Against Each Statement: Organisational Structure

Organisational Structure Statement		Arithmetic Mean	Standard Deviation	Rank
7.	The organisational structure provides the opportunities needed to promote the effective communications helping the exchange of knowledge quickly	3.72	0.928	1

Organisational Structure Statement		Arithmetic Mean	Standard Deviation	Rank
8.	Organisational structure makes the job rotation easier, which contributes in the transfer of knowledge	3.58	0.887	3
9.	Organisational structure helps to adopt a policy of openness and remove the border, which promotes the culture of teamwork	3.60	0.938	2
10.	Organisational structure provides sufficient flexibility to facilitate the information participation process across the organisational units	3.55	0.898	4
11.	Organisational structure helps the horizontally knowledge flow in the company	3.55	0.924	5
12.	Organisational structure contributes in promoting the trends and practices that encourage individual initiatives	3.27	0.905	6
Overall:		**3.55**	**0.91**	

From Table (5-7) it would appear that there is a strong level of agreement about the role of organisational structure in facilitating knowledge flow and transfer. In particular, respondents indicated that organisational structure has a significant impact on the culture of openness, sharing and teamwork within the company, however the results indicated that there was less agreement around the contribution organisational structure has in promoting individual initiatives.

5.4.4.3 Incentive Systems

Respondents were asked to indicate to what extent they agreed with a series of statements relating to the impact of incentive systems in the organisation and in terms of promoting creativity amongst the workforce. The results identifying the arithmetic mean and standard deviation against each Incentive System statement are illustrated in Table (5-8) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-8) Mean and Standard Deviation Against Each Statement: Incentive Systems

Incentive Systems Statement		Arithmetic Mean	Standard Deviation	Rank
13.	The company traditions Include providing individual incentives for creative employees	3.23	1.215	5
14.	The company traditions reinforce the shared expectations of getting rewards when introducing creative ideas for solving the problems	3.33	1.129	2
15.	The company encourages employees to develop their skills, experiences, and the exchange of knowledge	3.33	1.100	1
16.	The company is sending creative employees to participate in training courses and conferences	3.21	1.226	6
17.	The company is providing financial incentives to get the job done efficiently and effectively	3.33	1.108	3
18.	The company is providing non-financial incentives to get the job done efficiently and effectively	3.33	1.220	4
Overall:		**3.29**	**1.166**	

From Table (5-8) there was a stronger level of agreement around the company encouraging employees to develop their skills and exchange knowledge, and around the company traditions reinforcing the shared expectations around rewards for problem solving. There was less agreement around the specific identification of creative employees and facilitating them to attend training courses and events.

The standard deviation scores against these statements were higher than for the previous components of information systems and organisational structure. This

suggests there was greater variability in the levels of agreement respondents had with these statements.

Overall, however, the results reflect the fact that there is a general awareness in the Jordan Telecom Group (Orange) for the importance of incentives and their role in encouraging employees and motivate them to initiative and create new ideas, which will reflect positively on the effective action and the sharing and transfer of knowledge, which is one of the fundamentals of the implementation of knowledge management.

5.4.4.4 Operations

Respondents were asked to indicate to what extent they agreed with a series of statements relating to the impact of operations in the organisation and in terms of promoting creativity amongst the workforce.

The results identifying the arithmetic mean and standard deviation against each Operations statement are illustrated in Table (5-9) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-9) Mean and Standard Deviation Against Each Statement: Operations

Operations Statement		Arithmetic Mean	Standard Deviation	Rank
19.	The company traditions help the main units employees to share the important data of the operations, which promotes the exchange of experiences and skills	3.57	0.982	2
20.	The company provides clear directions for the operations to help the staff working with skill and efficiency	3.53	0.890	3
21.	The company trends contribute in strengthening the policy of mutual influence between the supervisor and the employee	3.44	0.915	4

Operations Statement		Arithmetic Mean	Standard Deviation	Rank
22.	The supervisor and the employee discuss freely what they need from each other, which contributes in the consolidation of the values of openness and the removal of barriers	3.60	1.026	1
23.	The company traditions encourage learning and continuous improvement of operations	3.39	1.009	6
24.	Operations are subject to the development and the continuous improvement through the adoption of a culture that promotes the acquisition and use of knowledge	3.39	0.927	5
Overall:		**3.49**	**0.958**	

The findings from Table (5-9) suggest that employees perceive operations to be important with regard to promoting good sharing and use of knowledge. In particular, the relationship between the supervisor and the employee was highlighted as an area where there was a higher level of agreement. There was a lower level of agreement around the company's traditions encouraging continuous improvement of operational functions, and through the adoption of a culture that promotes the acquisition and use of knowledge.

5.4.4.5 Personnel

Respondents were asked to indicate to what extent they agreed with a series of statements relating to the impact of personnel in the organisation and in terms of personal development, innovation and teamwork. The results identifying the arithmetic mean and standard deviation against each Personnel statement are illustrated in Table (5-10) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-10) Mean and Standard Deviation Against Each Statement: Personnel

Personnel Statement	Arithmetic Mean	Standard Deviation	Rank

Personnel Statement		Arithmetic Mean	Standard Deviation	Rank
25.	The company traditions encourage employees to develop their ideas, experience, & their skills	3.42	0.948	3
26.	The company traditions provide training for staff to work on the performance development	3.54	0.959	2
27.	The company's practices contribute to promote the acceptance the difference and the other opinion among the staff so as to encourage the generation of innovative ideas	3.33	0.961	4
28.	The values in the company encourage individual initiative	3.27	1.005	5
29.	The culture and the values of the company encourage the staff to promote teamwork and team spirit	3.54	0.950	1
30.	Standards and assumptions in the company help employees to use initiative and be creative	3.24	1.013	6
Overall:		**3.39**	**0.973**	

The findings from Table (5-10) suggest that there is a slightly lower level of agreement overall to the personnel statements than with the other previous components. However, it would appear that initiative and creativity are generally considered to be encouraged amongst the staff.

For the personnel component, the overall arithmetic mean and the standard deviations confirm the existence of positive trends by the respondents. This reflects also the positive view the Jordan Telecom Group (Orange) holds of its employees, and its obvious interest in training them, raising their capabilities and strengthening their expertise, which will positively impact on promoting the concept of knowledge management.

5.4.4.6 Leadership

Respondents were asked to indicate to what extent they agreed with a series of statements relating to the impact of leadership in the organisation.

The results identifying the arithmetic mean and standard deviation against each Leadership statement are illustrated in Table (5-11) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-11) Mean and Standard Deviation Against Each Statement: Leadership

Personnel Statement		Arithmetic Mean	Standard Deviation	Rank
31.	Top management adoption of values and practices that promote teamwork philosophy for the exchange of ideas, experience and skills among workers in the company's various units	3.38	1.024	2
32.	Top management has a culture of forgiveness for mistakes to encourage innovation	3.02	1.122	6
33.	Top management encourages staff to take the appropriate decision, even if there are no rules follow	3.23	1.003	5
34.	Employees are encouraged to organise celebrations and activities Increase the ability to learn and acquire knowledge	3.32	0.989	4
35.	The company's senior management accepts change	3.41	0.964	1
36.	Top management creates an atmosphere of confidence and respect among employees to encourage them to generate creative	3.33	1.079	3

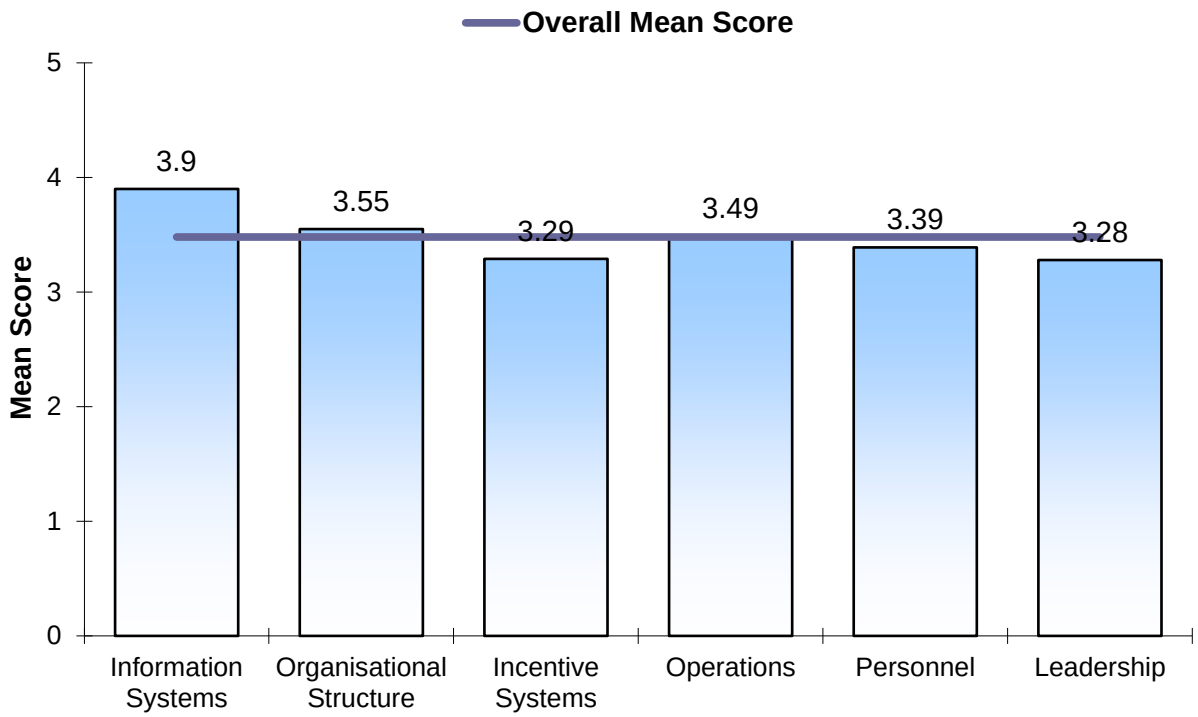
Personnel Statement		Arithmetic Mean	Standard Deviation	Rank
	ideas			
Overall:		**3.28**	**1.030**	

Table (5-11) suggests that the leadership component has the lowest level of agreement overall with the statements, however, it is agreement nonetheless.
The highest level of agreement was around the view that the company's senior management accepts change.

The lowest related to agreement that there was a culture of forgiveness of mistakes.

5.4.4.7 Key Organisational Issues

The findings from the employee survey confirm that there is general agreement that the different components in the proposed Knowledge Management Structural Model are in place within the organisation, although it would appear that some components relating to organisational culture are more embedded than others. Figure (5-6) compares the arthritic mean scores of each of the 6 domains as compared with the overall mean score against all statements:



Number of respondents = 252

Figure (5-6) Comparison between Employees level of Agreement against the Key Components pertaining to Organisational Culture

Figure (5-7) presents this data in an alternative format to show more clearly where the organisation needs to focus its efforts in relation to changing the culture of the organisation so that it is better able to accommodate the Knowledge Management Model or vice versa, where the Knowledge Management Model may need to be strengthened.

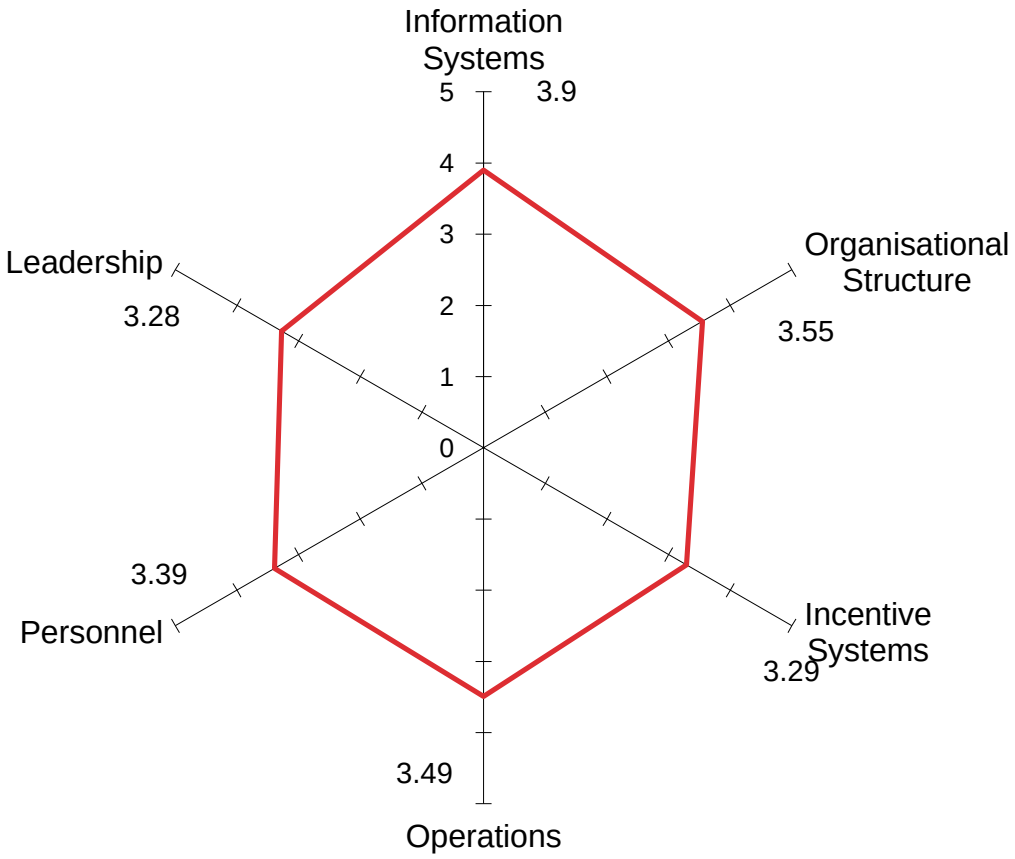


Figure (5-7) Organisational Culture and the Key Components of the Knowledge Management Model

5.4.5 Employee Perceptions of Knowledge Management

This section presents employee perceptions about the extent to which the three components of knowledge management are embedded within the Jordan Telecom Group (Orange): knowledge generation; knowledge sharing; and knowledge applications.

This part of the survey aimed to answer the second key research question of the study and to ascertain to what extent different knowledge management practices are implemented in the Jordan Telecom Group (Orange) from the perspective of its employees.

Again respondents were asked to what extent they agreed with a series of statements pertaining to these components of knowledge management.

5.4.5.1 Knowledge Generation

Respondents were asked to indicate to what extent they agreed with a series of statements relating to knowledge generation within the organisation. The results identifying the arithmetic mean and standard deviation against each knowledge management statement are illustrated in Table (5-12) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-12) Mean and Standard Deviation Against Each Statement: Knowledge Generation

Knowledge Generation Statement		Arithmetic Mean	Standard Deviation	Rank
1	The company has systems and programs documenting the experiences, practices, and expertise available to help in generating knowledge	3.54	0.862	1
2	The company provides programs to develop knowledge and skills of the employees	3.34	0.954	4
3	Conducting development researches to help in generating knowledge	3.26	0.912	7
4	The company traditions help employees to develop their experience and knowledge through seminars and teamwork	3.31	0.990	5
5	Employees are encouraged to generate creative and innovative ideas	3.31	1.014	6
6	The company is searching for best practices	3.44	0.949	2
7	The company organises brainstorming sessions to generate creative ideas	3.13	1.033	8

Knowledge Generation Statement		Arithmetic Mean	Standard Deviation	Rank
8	The company seeks to attract creative and distinctive competencies of universities and consultancy centres to help in generating knowledge	3.41	1.051	3
Overall:		**3.34**	**0.971**	

It can be observed from Table (5-12) that respondents felt most strongly that the company has a range of systems and processes in place to generate knowledge. There was less agreement that the company proactively encourages initiatives to generate ideas and creativity although the higher standard deviation against this statement suggests that there may be pockets within the organisation where this does happen but perhaps is not something that is consistently applied across all sections.

The overall results of the arithmetic means and the standard deviations for this section, confirm the presence of the positive trends within the Jordan Telecom Group (Orange) in generating knowledge; this is due to the nature of the Group's work, which imposes the need to generate and develop knowledge in order to face the intense competition from other companies operating in the market. The Group ensures a comprehensive follow-up of the market, enabling best practice and lessons learned to be applied through many department such as the Department of Studies and the Department of Networks and Information Technology.

5.4.5.2 Knowledge Sharing

Respondents were asked to indicate to what extent they agreed with a series of statements relating to knowledge sharing practices within the organisation. The results identifying the arithmetic mean and standard deviation against each knowledge management statement are illustrated in Table (5-13) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-13) Mean and Standard Deviation Against Each Statement: Knowledge Sharing

Knowledge Sharing Statement		Arithmetic Mean	Standard Deviation	Rank
9	The company provides methods to help in sharing knowledge	3.34	1.019	2
10	The company has programs and activities for the exchange of experts and specialists between departments and units to enable staff to benefit from their experience and knowledge	3.18	0.997	5
11	The company adopts a culture that promotes the exchange and sharing of experiences and knowledge through seminars, publications and reports	3.40	0.971	1
12	The company supports building mutual trust between employees to share knowledge	3.33	0.893	3
13	Knowledge owners do not want to share their knowledge with others	3.25	1.061	4
14	The company supports sharing knowledge through dialogues and narrative stories of success	3.07	0.971	8
15	The company is providing techniques to help the exchange of knowledge indirectly between employees	3.08	0.983	7
16	The company organises regular meetings and workshops to encourage employees to share knowledge	3.16	1.029	6
Overall:		**3.23**	**0.991**	

The knowledge sharing variable is measured in statement 9 to 16 of the third part of the questionnaire, as illustrated in Table (5-13), which indicates a medium positive trend for the members of the study sample concerning the knowledge sharing processes in the implementation of knowledge management.

The arithmetic means of the paragraphs that measure these trends ranged between 3.07-3.40 and the standard deviations ranged between 0.893-1.061, which is higher than the default arithmetic mean scale equivalent to 3, and this is an indication that the company is sharing knowledge.

The table also shows that the statement "The company adopts a culture that promotes the exchange and sharing of experiences and knowledge through seminars, publications and reports" had the highest approval grades; as its arithmetic mean was 3.40 and its standard deviations was 0.971, while the statement "The company supports sharing knowledge through dialogues and narrative stories of success" had the lowest approval grades; as its arithmetic mean was 3.07 and its standard deviation was 0.971.

This can be explained by the Group's strategy with its clear need to take advantage of the inherent knowledge of all the employees and to encourage them to share experiences through technology and other means provided by relevant parts of the Group such as via the intranet systems and the internal communications department in the Group.

5.4.5.3 Knowledge Application

Respondents were asked to indicate to what extent they agreed with a series of statements relating to knowledge application within the organisation.

The results identifying the arithmetic mean and standard deviation against each knowledge management statement are illustrated in Table (5-14) below, along with a ranked position as to where the statement lies in terms of strength of agreement:

Table (5-14) Mean and Standard Deviation Against Each Statement: Knowledge Application

Knowledge Application Statement		Arithmetic Mean	Standard Deviation	Rank
17	The company has techniques and methods that help the use and the application of knowledge	3.55	0.933	2
18	The company cancels all procedures and policies that limit their ability to apply knowledge	3.33	0.942	8
19	The application of knowledge of one of the most important priorities of the company, and gaining the advantage of knowledge is more important than the knowledge itself	3.41	0.955	7
20	The company is interested in the application of new knowledge when evaluating performance	3.45	0.966	6
21	The company ensures to apply the lessons learned for improving its services	3.50	0.835	5
22	Employees are encouraged to apply knowledge	3.52	0.899	4
23	The company stresses on the importance of the use and the application of knowledge	3.54	0.933	3
24	New knowledge is used to help improving the working procedures and to modify operations	3.56	0.897	1
Overall:		**3.48**	**0.920**	

The knowledge application variable is measured in paragraphs 17 to 24 of the third part of the questionnaire, as illustrated in Table (5-14), which indicates a medium grade positive trend for the members of the study sample concerning the knowledge application processes in the implementation of knowledge management.

The arithmetic mean of the paragraphs that measure these trends ranged between 3.32-3.56 and the standard deviations ranged between 0.897-0.943, which is higher than the default arithmetic mean scale equivalent to 3.

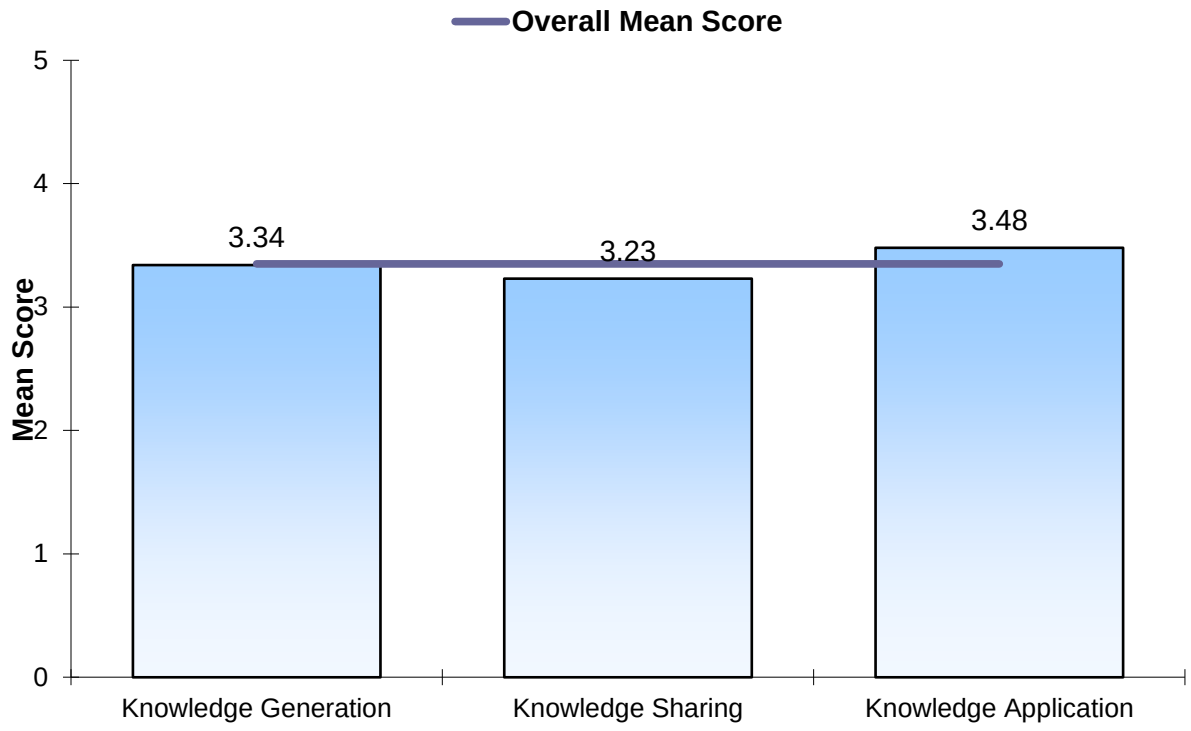
The table shows that the statement "New knowledge is used to help improving the working procedures and to modify operations" had the highest approval grades; as its arithmetic mean was 3.56 and its standard deviations was 0.897, while the statement "The company cancels all procedures and policies that limit their ability to apply knowledge" had the lowest approval grades; as its arithmetic mean was 3.33 and its standard deviation was 0.942.

This can be explained by the Group's awareness for the importance of the applications of knowledge in all the activities carried out by the organisation**,** and in order to outperform its competitors.

5.4.5.4 Key Knowledge Management Issues

The findings from the employee survey confirm that there is general agreement that the different knowledge management components in the proposed Model are in place within the organisation, although it would appear that some components more embedded than others.

Figure (5-8) compares the arthritic mean scores of each of the 3 processes as compared with the overall mean score against all statements:



Number of respondents = 252

Figure (5-8) Comparison between Employees level of Agreement against the Key Components pertaining to Knowledge Management

Figure (5-9) presents this data in an alternative format to show more clearly where the organisation needs to focus its efforts in relation to strengthening its knowledge management processes

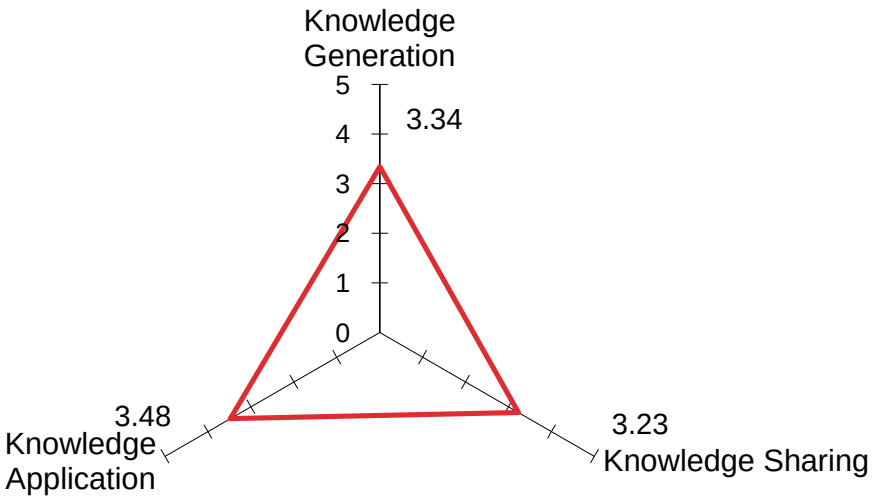


Figure (5-9) Knowledge Management Processes

From Figures (5-8) and (5-9), it can be seen that knowledge application factors appear to be more embedded within the organisation that the other two factors, and that knowledge generation is more embedded than knowledge sharing, suggesting a more closed culture within the organisation with individual departments perhaps more working in silos and reluctant or not empowered to share information and knowledge.

5.4.6 Correlation between Employee Perceptions of Organisational Cultural Components and Knowledge Management Practices

The third key research question to be answered in this study was to assess if there is any correlation between employees perceptions of how embedded different organisational cultural factors are in the organisation and their perceptions of what knowledge management practices are implemented across the Group.

A similar study was undertaken by Allameh, Zare and Davoodi, 2011 who examined the relationship between three enablers of knowledge management (technology, culture and structure) and six knowledge management processes.

In this study, they used a range of statistical tests to assess correlation, cross tabulating each of the enablers with each knowledge management process with similar results being generated.

A similar statistical model was used in this study and the correlation between the different variables is calculated using the CORREL function on Microsoft Excel and through applying the T-Test to assess the level of significance between the two.

Table (5-15) presents the results of statistical testing for correlation and levels of significance against each of the six organisational cultural components identified in the proposed Knowledge Management Structural Model, and the three identified knowledge management processes.

Table (5-15) Correlation and Statistical Significance between Employee Scores against organisational cultural factors and knowledge management processes

	Knowledge Generation	Knowledge Sharing	Knowledge Application
Information Systems			
Correlation	-0.022661498	-0.108056586	0.009883748
T-Test	P= 6.55577E-10	P = 5.62908E-05	P = 3.20093E-13
Organisational Structure			
Correlation	0.097957764	0.04696537	-0.08666686
T-Test	P = 1.26682E-34	P = 0.00780277	P = 2.33241E-40
Incentive Systems			
Correlation	0.111109122	0.025262459	-0.02371182
T-Test	P = 1.36365E-11	P = 0.015733942	P = 1.1207E-14
Operations			
Correlation	0.000133777	-0.010554175	-0.04583333
T-Test	P = 9.38586E-19	P = 0.435866023	P = 6.02112E-23
Personnel			
Correlation	0.112264146	-0.012899649	-0.003237049
T-Test	P = 0.182821329	P = 3.19443E-20	P = 0.012026951
Leadership			
Correlation	-0.060848395	0.002627714	0.051736773

T-Test	P = 1.04864E-19	P = 2.26341E-50	P = 1.68198E-17

In relation to the correlation figures calculated using the CORREL function in Excel, a score of 1 would indicate a complete correlation and a score of 0 would indicate no correlation. A negative score suggests that when one variable goes up, the other goes down. In relation to Table (5-15) therefore, it would appear that there is a limited correlation between employee perceptions between the identified organisational cultural factors and between perceptions of knowledge management practices.

In relation to the T-Test, P is the level of significance. A P-value below 0.05 is generally considered to be significant, while one of greater than 0.05 indicates no difference between the groups. All of the calculated P-values in Table (5-15) were below 0.05 which suggests that the difference between employee perceptions of the different organisational cultural factors and their perceptions of knowledge management practices are significant.

However, the data was also analysed in another way to assess to what extent high overall mean scores (of 4 or more) assigned to each of the organisational cultural factors, correlated to high scores against the three different knowledge management processes.

Figure (5-10) illustrates what percentage of high scores for organisational culture factors were also found to be high against the different knowledge management processes:

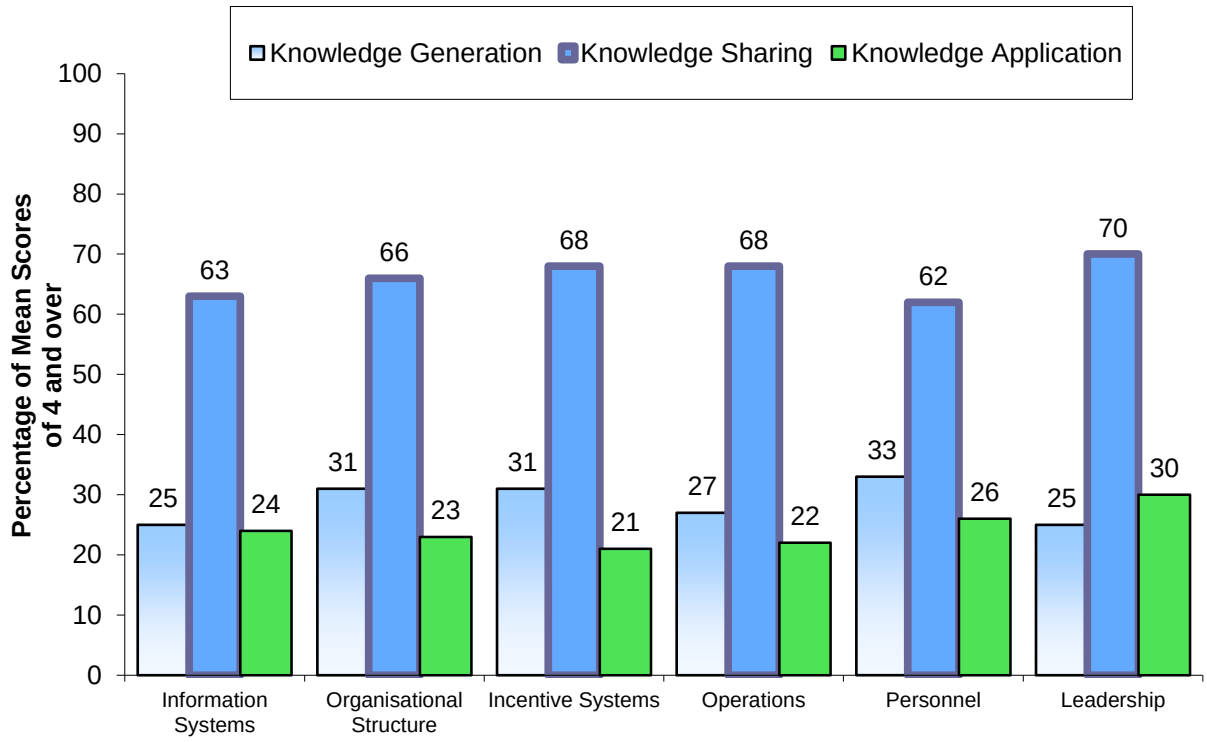


Figure (5-10) Percentage of Mean Scores of 4 and over for organisational cultural factors which were also 4 and over for knowledge management practices

It can be seen from Figure (5-10) that consistently, there was a higher proportion of higher scores against 'knowledge sharing' as correlated with the higher scores for each of the different organisational cultural factors. This suggests that organisational factors may be more strongly associated with knowledge sharing practices than either of the other two practices relating to knowledge generation and knowledge application. Although this is in contrast the results identified in Figure (5-9) where knowledge sharing appeared to be less embedded in the organisation. This suggests that there is clearly an issue around knowledge sharing within the organisation, with perhaps variable practice, and may be an area to warrant further investigation in the future.

5.5 Chapter Summary

This chapter presented the key findings from the survey of employees identifying what aspects of the proposed Knowledge Management Structural Model they perceived to be most embedded with the Jordan Telecom Group (Orange).
It also identified to what extent they perceived different knowledge management practices identified in the Model to be in operation within the Group.

The analysis identified that from an employee perspective, the stronger organisational cultural factors related to information systems, organisational structure and operations. Leadership and incentive systems appeared to be less strong within the Jordan Telecom Group (Orange). This may therefore be an area the organisation may wish to investigate further in steering the future direction of knowledge management practices.

In terms of knowledge processes, the analysis of the surveys suggested that knowledge application was more firmly embedded within the Group and that knowledge sharing was the least embedded.

In exploring a potential correlation between the factors associated with organisational culture and knowledge management practices, the results were inconsistent.

A simple correlation test cross tabulating the mean scores for each organisational cultural factor against knowledge management practices and the application of a T-test to assess significance, indicated that there was no strong correlation between the two. However, an alternative analysis focusing on comparing the high mean scores (4 and above) between the two variables, found a link between the factors and knowledge sharing practices.

The findings from the survey set the agenda for the focussed interviews with managers by identifying issues that were worthy of further exploration to gain a deeper insight into how the different components of the proposed Knowledge Management Structural Model are perceived by employees within the Jordan Telecom Group (Orange).

Chapter 6: Feedback from the Interviews

6.1 Introduction

This chapter follows on from the exploration of the survey findings in the previous chapter and outlines the key feedback provided through the structured interviews which were conducted with a sample of employees from across different functions within the organisation. The survey identified key areas for further exploration, and the qualitative data collected around this via the interviews is presented here.

6.2 Using the Survey to Inform the Interview Process

The interviews were conducted following the survey to explore in more depth some of the issues raised, and to complement and validate the quantitative date generated from the survey. In particular, the survey had identified potential issues around:

- A potential lack of understanding of knowledge management practices within the Group given the lower levels of agreement associated with knowledge generation and sharing in the survey findings;

- How the organisational structure promotes or inhibits knowledge management within the Group and how employees are incentivised to participate in this with the survey providing some variable results around this;

- How leadership and organisational culture support employees within the Group. The survey results suggested that the leadership component of the proposed Model had the lowest level of agreement overall and so further exploration of this would enhance understanding;

- How employees are supported to participate in knowledge management and equipped with the skills and training needed to do this effectively. Issues around

the personnel component of the model which included reference to training and support, also received a lower overall agreement score by employees in the survey results and therefore warrant further investigation.

The interviews asked each participant for their perceptions of the different components of the proposed Model in English, and then focussed more specifically on key issues of these most pertinent to them as a result of their job role or level of experience within the Group.

6.3 Profile of the Interviewees

The interviewees were selected provided a broad range of perspectives from across the organisation with a mix of departments, roles and length of service. Initially an email invitation was sent out to key managers across each of the key functions of Group asking if they would like to participate in the interviews.

Full details of the purpose of the interviews and the study were given along with assurances around how the information generated in the interviews would be used and disseminated.

Initially, eight managers agreed to participate and details of interview times and dates were sent out and agreed. Two managers, however, had to drop out of the interviews due to work commitments where alternative interview times were not feasible. Therefore, six managers were interviewed as part of this study to explore some of the issues raised in the survey in more depth from their perspective.

Their level of seniority in the organisation ranged from Team Member up to Department Manager, and their length of service within the organisation ranged from 1 year up to 14 years (median: 7 years). This is illustrated in Table (6-1):

Table (6-1) Role and Length of Service of Interviewees

Role		Department	Length of Service
1.	Department Manager	Development and Studies	12 years
2.	Department Manager	Finance	14 years
3.	Team Leader	Technical Support	7 years

4.	Team Leader	Public Relations	5 years
5.	Team Member	Marketing	3 years
6.	Team Member	Sales	1 year

Tables (6-2) through to (6-7) illustrate the responses to some of the key questions asked during the interviews and present a summary of what was said by the interviewee along with specific quotes from the interview.

6.4 Interview One

The first interview was conducted with the Manager of the Development and Studies Department. This was a senior manager with a significant 12 years of experience within the organisation. Given their role and length of experience, this interview focussed more specifically on their awareness and understanding of knowledge management, and their perceptions of organisational structure and how this may impact on knowledge management. The key feedback from the interview is given in Table (6-2):

Table (6-2) Interview One Feedback

Question	Response
Q1. Knowledge Management as a new methodology, is it an unclear concept?	The interviewee felt that whilst there was some level of understanding of the concept of knowledge management within the organisation, is was not universally shared amongst all employees and was dependent on which departments individuals worked in. They felt that there was some acknowledgement of the relationship of knowledge management to company performance, but this was not shared by all. *"For some individuals it is not clear, but for me it is, as my field of specialised is the field of knowledge, but as to the Jordan Telecom Group (Orange) the concept is not clear exactly, where the administration did not fully aware of the importance*

Question	Response
	of the applications of knowledge management in order to raise the level of performance in the company" (Interviewee One).
Q2. Knowledge Sharing means the good transfer of knowledge between all levels of management, is there any indicators in the group for the adoption of this concept?	The interviewee themselves was very clear in their understanding of the concept of knowledge sharing and felt that there were indications within the Jordan Telecom Group (Orange) that that this concept had been adopted. However they indicated that the clear demarcation of boundaries between departments in the organisation may inhibit this. *"Knowledge management is to discover, develop, utilise, deliver, and absorb knowledge inside and outside the organisation, which means that it's important to open all channels for the easiest transfer of knowledge, and it could be argued that the group adopts the concept of knowledge sharing, but to some extent, because there are clear boundaries between departments, which need approval for the transfer of knowledge between them"* (Interviewee One).
Q3. Does the current organisational structure reflect the overlapping powers and functions?	The interviewee indicated that the current organisational structure is not fit for purpose for the effective implementation of a knowledge management model and that structural change is required to enable the 'knowledge culture' to emerge and thrive. *"Re-structuring the organisational structure is a must, with the basics of knowledge management, which will lead to establishing the culture of knowledge generation, sharing and application,*

Question	Response
	which means that the company's senior management accepts change" (Interviewee One).
Q4. Does the organisational environment and the shared values provide support to innovation?	Again, the interviewee suggested that although there were aspects about the current organisational environment and existing culture that supported innovation within the company, there was still a need for organisational restructuring to fully support this. *"The organisational structure contributes in promoting the trends and practices that encourage individual initiatives. When re-structuring the organisational structure with the basics of knowledge management, more support to innovation will take place in the group"* (Interviewee One).

The analysis of the first interview, reflects that the view that the concept of knowledge management is not fully clear across the organisation, with the administration not being fully aware of the importance of the applications of knowledge management, and that any solo efforts or knowledge is through the individual capabilities upon the nature of the knowledge they have acquired. This finding supports the findings from the qualitative survey which suggested the same.

6.5 Interview Two

The second interview was conducted with the Finance Department Manager who again had extensive experience within the organisations. Given their financial role within the Group, the interview focussed more specifically around their perceptions of incentives for employees around financial reward and also other non-financial benefits.

The headline feedback from the interview is given in Table (6-3):

Table (6-3) Interview Two Feedback

Question	Response
Q1. Does the company provide financial incentives to get the job done efficiently and effectively?	The interviewee confirmed that financial incentives are important within the organisation. *"Jordan Telecom Group (Orange) believes in the importance of the financial incentives, thus the company provides such advantages limited to the performance only"* (Interviewee Two).
Q2. Does the company provide non-financial incentives to get the job done efficiently and effectively?	The interviewee did not feel that the non-financial benefits (such as training opportunities, team events, flexible working etc.) were widely adopted as a strategy to improve performance although they did cite examples of the organisation arranging social events for its employees. *"The concept of non-financial incentives is not clear, only if considering the social activities that the company encouraging among the employees"* (Interviewee Two).
Q3. Does the company send creative employees to participate in training courses and conferences?	The Interviewee indicated that the main consideration around training was meeting the core needs of the company within agreed budgets, therefore suggesting that additional training to support innovation may be not readily available. Given the role of the Interviewee, with a clear focus on the financial aspects of the organisation, this

Question	Response
	perception is perhaps not surprising. *"The main base in the concept of training is the company's need, thus, if the interest of work required to send the staff for training or participating conferences, it will do so, but we must take into account the specific budget that are not to be exceeded"* (Interviewee Two).
Q4. Do the company's traditions reinforce the shared expectations of getting rewards when introducing creative ideas for solving the problems?	The interviewee suggested that performance generally was related to progression and financial reward but did not explicitly link this to creativity and reward. *"Performance and practice are the main factors that govern any employee career progression, thus, any employee located within the circle of outstanding performance, will be promoted and rewarded"* (Interviewee Two).

Given the nature of the role of the second interviewee (within finance), the focus of this interview was on the incentive systems on the group; the first answer illustrates that the group is adopting an incentive system limited to the performance only; which is in contrast with the results of statistical information generated from the survey which indicated that the adoption of any incentives system should not be limited to the performance only.

6.6 Interview Three

The third interview was conducted with an experienced Team Leader from within the Technical Support team. The interview therefore focused more on the information

systems that exist within the Group to support knowledge management and their perceptions of information flows, and operations. Key points from the interview are given in Table (6-4):

Table (6-4) Interview Three Feedback

Question	Response
Q1. Does the company provide clear directions for the operations to help the staff working with skill and efficiency	The interviewee felt strongly that there were clear guidance for staff around the operational functioning of the group, and indicated that they were aware that this was an area where competitive advantage could be achieved. *"Our organisation is aware of the importance of leading edge technology solutions as a tool of enhancing competitive strategy; thus, the main operational framework is clear and provides directions that help in working with skills and efficiency"* (Interviewee Three).
Q2. Do the supervisor and the employee discuss freely what they need from each other?	The interviewee suggested that knowledge transfer flowed well between employees in relation to their needs from each other, and recognised the importance of this. *"Because it contributes in the consolidation of the values of openness and the removal of barriers, thus, the administration urges the parties to permanent dialogue between them"* (Interviewee Three).
Q3. Does the company traditions encourage learning and continuous improvement of operations	The Interviewee suggested that from their perspective, there is a culture that promotes learning and continuous improvement within the organisation.

Question	Response
	"Because operations must be subjected to the development and the continuous improvement through the adoption of a culture that promotes the acquisition and use of knowledge, thus, the company is encouraging learning and continuous improvement of operations through its adopted policy" (Interviewee Three).
Q4. Are the communications channels clear within the organisational structure?	The interviewee felt that there were barriers to having clear communication channels due to the current organisational structure. *"The current organisational structure prevents us from participating in the formulation of the company policies, as we are just implementing tools of the instructions"* (Interviewee Three).

The third interview implied that technological solutions are considered to be an important tool in enhancing organisational performance and in line with the findings from the survey, suggests that information systems are a key organisational factor impacting on the implementation of knowledge management within the Jordan Telecom Group (Orange). Similar to a previous interview, the interviewee suggested that the current organisational structure is not fit for purpose in relation to ensuring the effective implementation of knowledge management applications.

6.7 Interview Four

Interview four was conducted with a Team Leader from within the Public Relations Department and the interview explored in more detail their perceptions of culture to

support creativity around knowledge, and how internal structures and processes may or may not support this. Extracts of the feedback from the interview are given in Table (6-5):

Table (6-5) Interview Four Feedback

Question	Response
Q1. Does the top management create an atmosphere of confidence and respect among employees to encourage them to generate creative ideas?	The interviewee suggested that there was some indication that there is a culture where employees are encouraged to share information and generate ideas, however, they implied that this was not yet particularly embedded in the organisation. *"When the main goal is the implementation of knowledge management in the Jordan Telecom (Orange), then top management must create this atmosphere, although indicators show that the company is adopting these trends in the way towards the implementation of knowledge management"* (Interviewee Four).
Q2. Does the company have systems and programs documenting the experiences, practices, and expertise available to help in generating knowledge?	Whilst the interviewee felt that there were systems in place within the organisation to promote and support knowledge generation, these were not embedded and not clearly documented. *"The company has programs and activities for the exchange of experts and specialists between departments and units to enable staff to benefit from their experience and knowledge, although these activities are limited and not clearly documented, and need to be spread among employees of the company"* (Interviewee Four).
Q3. Does the company cancel all procedures and	The interviewee agreed that any policies that limit the organisation's ability to apply knowledge are no

Question	Response
policies that limit their ability to apply knowledge?	longer supported. However, they felt that there was no particular steer or direction as to how this is achieved. *"The application of knowledge is one of the most important priorities of the company, that is why it is noted that the company is cancelling all procedures and policies that limit their ability to apply knowledge, although it's with no clear vision"* (Interviewee Four).

The findings from the fourth interview are also consistent with the results from the survey which suggest that there is a lack of clear vision in relation to the implementation of knowledge across the Jordan Telecom Group (Orange). It suggested that there are elements of an organisational culture to support this but it is not yet fully embedded.

6.8 Interview Five

Interview five was conducted with a more junior Team Member from within the Marketing Department and explored their perceptions of how employees are supported to work in a way that promotes knowledge management, and their understanding of it. The highlight feedback from the interview is given in Table (6-6):

Table (6-6) Interview Five Feedback

Question	Response
Q1. Are the employees allowed to be flexible with the work and systems to enhance the exploitation of technology?	In contrast to some of the previous interviews, this interviewee suggested that the current organisational structure was fit for purpose, and in this respect, promoted flexibility within the system to enable employees to exploit the benefits of technology. *"Because the flexible organisational structure is being used to ease communication and encourage*

Question	Response
	employees to achieve technological objectives, the company allows us to participate in enhancing the systems with new ideas" (Interviewee Five).
Q2. Are the employees encouraged to apply knowledge?	The interviewee confirmed that knowledge application was encouraged by the organisation but that this was inconsistently done throughout and without any clear expectations for how this is done. *"Employees are encouraged permanently and continuously, but the standards are not clear, and with individual initiatives from some managers"* (Interviewee Five).
Q3. Knowledge and information, are they the same concept?	The interviewee, despite being a more junior member of staff, felt confident in their view that knowledge and information were separate concepts whilst acknowledging the interconnection between them. *"Knowledge and information, I do not think they are the same thing, and I think that the concept of knowledge is larger than the concept of information, but the information is necessary to knowledge"* (Interviewee Five).
Q4. Does the company support building mutual trust between employees to share knowledge?	Like a previous interviewee, this person felt that whilst there were some areas in the organisation where there was confidence to share knowledge, this was not in place throughout the whole company and that departmental demarcation was apparent in relation to knowledge sharing. *"In some departments and sections confidence and trust are clear helping the exchange of knowledge and information smoothly, but in some other departments and sections it is not, that is why I think*

Question	Response
	that the company should support building this mutual trust between all departments" (Interviewee Five).

Again, this interview supports the findings from the survey which suggests that more work may be needed within some parts of the organisation to build mutual trust and confidence to effectively share information between both individuals and departments.

6.9 Interview Six

The final interview was conducted with a relatively new and junior Team Member from within the Sales Department and explored a range of issues highlighted from the survey but most interesting, were their perceptions of training and development and support for team working. The headline feedback from the interview is given in Table (6-7):

Table (6-7) Interview Six Feedback

Question	Answer
Q1. Do the company traditions provide training for staff to work on performance development?	The interviewee acknowledged the importance of training in increasing knowledge generation and transfer, but felt that the organisation needed to invest more in training relating to this. *"Training accelerates the ability to implement emerging successive information and knowledge management strategies, thus the company must give more effort to the training process, through a clear policy in order to increase the knowledge that encourage knowledge generation"* (Interviewee Six).
Q2. Does knowledge management build best practice and manage the organisational memory?	The interviewee confirmed that they agreed that knowledge management had a role in building best practice within the organisation.

Question	Answer
	"Knowledge management is managing the corporation's knowledge through systematically and organisationally specified processes, thus implementing knowledge management will surely build best practices" (Interviewee Six).
Q3. Do the company traditions help employees to develop their experience and knowledge through seminars and teamwork?	The interviewee, being still relatively new, had not had personal experience of being offered to attend any seminars to develop their experience and knowledge, but did confirm that they felt that teamwork was encouraged. *"As a new employee, I did not touch the general trend towards the holding of seminars, but it is clear that the company traditions are encouraging the teamwork concept"* (Interviewee Six).

6.10 Chapter Summary

This chapter presented some of the key findings from the interviews with a range of managers across the Jordan Telecom Group (Orange). The interviewees represented many of the different functions within the organisation. The content of the interviews was informed by the findings from the survey, and the feedback provided weight and support to the quantitative results.

In particular, the interviews confirmed that issues around organisational structure and access to training were key issues that impact on knowledge management practices within the Group.

In addition, it provided some explanations for why knowledge sharing within the Group may need more attention due to a need to build up trust amongst different staff groups and departments to ensure this is facilitated. It also provided support for

the view that was indicated from the survey findings, that more work is perhaps needed around raising awareness and understanding of the role and purpose of knowledge management generally.

Given the important role the workforce plays, and being the most important element upon which any organisation depends on to provide excellent services to customers, the findings from the interviews are particularly important.

The findings suggest that employees perceive they are not fully engaged in the decision making process, and that they are not sufficiently encouraged to develop their skills and enhance their performance or to be innovative. This gives the Jordan Telecom Group (Orange) a clear steer on where efforts need to be focused if knowledge management is to be effectively implemented throughout its organisation and where different aspects relating to the organisational culture may need to be strengthened.

The next chapter will focus on exploring the implications of these findings and the proposed Knowledge Management Model for the Jordan Telecom Group (Orange) and the wider telecommunications industry in Jordan.

Chapter Seven: Discussion

7.1 Introduction

This chapter will discuss the key findings and outcomes from this study into how organisational culture factors may impact on the implementation of knowledge management within the Jordan Telecom Group (Orange). The chapter also explores the implications of the proposed Knowledge Management Structural Model for both the Jordan Telecom Group (Orange) specifically and more generally for companies operating within the Jordanian telecommunication sector.

7.2 The Knowledge Management Structural Model

The Jordan Telecom Group (Orange) had identified knowledge management practices as a key strategic issue it wanted to better understand and address in order to achieve competitive advantage in the telecommunications industry. At a time when capital in this sector is scare, large scale investment is needed in Jordan to roll out networks and improve services which means that providers such as the Jordan Telecom Group (Orange) need to work more innovatively. The organisation acknowledgement that knowledge management has a key role in facilitating this and therefore the Knowledge Management Structural Model has real value.

The critical review of the existing literature identified a number of key organisational cultural factors that may impact on knowledge management and also highlighted the key components of knowledge management practices. A number of knowledge management models have been previously proposed in the literature, which provided a basis for determining what elements should most appropriately be included in a specific model to suit the needs of the Jordan Telecom Group (Orange).

From the literature, the most prominent cultural features appeared to be around: information systems; organisational structure; incentive systems; operations; personnel; and leadership and so these were integrated into the Group's Model.
In terms of knowledge management processes, knowledge generation, knowledge sharing and knowledge application were identified as key and were also incorporated into the Model.

The research tools were then formulated around these components and the survey and interviews provided a means of assessing to what extent these components exist and are embedded within the Jordan Telecom Group (Orange).

7.3 Characteristics of Study Sample

The study took account of key demographic information about the respondents as it was felt that this may have a bearing on their experiences and perceptions of knowledge management and culture within the organisation. The results show that the majority of the study sample consisted of males, where their proportion reached 61.9% of the total study sample, this percentage is consistent with the fact that there are a higher proportion of male workers in the Jordanian society than female workers.

A high proportion of the respondents were in the age group '20 - less than 30 years' (57.1% of the total study sample), which indicates that the Jordan Telecom Group (Orange) focuses on hiring younger workers in most of the available jobs they have. Potentially this is based on the assumption that younger workers are more likely to be characterised by enthusiasm and motivation, to develop their abilities and speed of adaptation to modern management programmes. However, there is acknowledgement that this view is based on conventional age stereotypes, and instead older workers may well be more willing to share information and knowledge than younger workers and may have more experience of this.

There was a relatively high level of educational attainment within the study sample with 77% of respondents holding a bachelor's degree. This suggests that the Jordan Telecom Group (Orange) is focused on hiring people with significant qualifications in the available jobs they have, because they are more likely to have the right skills needed to carry out the tasks assigned to them.
The theory suggests that those individuals who have a higher level of educational attainment should be better equipped with the necessary skills to generate, share and apply knowledge however, it is unclear to what extent this holds true for this sample group.

As for the length of experience of respondents, the largest proportion was of 7 years' experience and more, the proportion reached 35.7% of the total study sample, the results summary of the characteristics of the study sample shows the level of interest that Jordan Telecom Group (Orange) gives to their staff in order to carry out the tasks assigned to them to provide outstanding service to its customers.

The Group also seeks to retain their workforce, which helps in the accumulation of knowledge, experience and skills as a way to enhance knowledge management processes. However, whilst a high rate of staff retention is positive in many respects it may be harder for the Group to make any changes to the organisational culture since it will be more firmly embedded in the mind-sets of its long serving employees.

7.4 Perceptions of Organisational Culture Factors

Six key organisational cultural variables were identified from the current literature as having most relevance to the Jordan Telecom Group (Orange). Overall, the findings suggested that there was a generally high level of agreement with each of these different variables.

The study confirmed that there were strong associations with information systems by respondents and that information technology contributes towards developing practices to help the company adapt with new knowledge as an initial contribution to the information technology trend. This suggests that the organisation has an interest

in using information technology and sophisticated communications technology in order to gain competitive advantage and improve employee performance.

This is consistent with the results found in other studies of a similar nature discussed earlier (Aurum, Daneshgar and Ward, 2008; Nevo and Chan, 2008) where systems, and technology to support these systems, are found to be crucial to effective knowledge management. Given the nature of the company, it is perhaps not surprising that this was an area which was perceived to be embedded most strongly by employees.

Organisational structure was also a factor that scored highly amongst respondents and the overall findings indicated that the organisational structure provides employees with the opportunities needed to promote effective communication amongst the workforce and has a key influence over the exchange of information and knowledge amongst employees which is in lines with the findings from other studies discussed previously.

The interviews, however, identified some conflicting views around organisational structure. One interviewee was very positive about the structure of the Jordan Telecom Group (Orange) saying that it was suitably flexible to facilitate good exchange of information and knowledge, whilst another suggested that the structure was too rigid in not allowing its employees to contribute or innovate. This suggests that there may be inconsistencies across the Group with different sections or departments having different sub cultures and structures to the ‘corporate’ ones.

Respondents in the survey indicated a moderate level of agreement with the statements around incentive systems. The results suggested that whilst for some employees, incentive systems are well embedded in the organisation, this was not the case for the entire workforce. These results are consistent with the findings from the studies of Kulkarni *et al.* (2007) and Palanisamy (2008) discussed in the literature review. Furthermore, the findings from the interviews suggested that whilst

financial incentives were well established and understood across the Group, the use of non-financial incentives was less clear.

As with incentive systems, whilst there was overall agreement, the arithmetic mean score for leadership was lower than in the other factors. In particular, the statement around top management having a culture of forgiveness for mistakes to encourage innovation, scored the lowest. In addition, the interviews suggested that there was a lack of vision in the organisation in relation to knowledge management practices.

Previous studies such as that of Nguyen and Mohamed (2011), discussed previously, identified that leadership is an extremely important factor in facilitating effective knowledge management practices, and so this is an area of potential weakness in the Jordan Telecom Group (Orange).

In relation to operations, there was a general agreement that the different practices were in place within the organisation. In particular respondents indicated that there is a good level of support between supervisors and employees to promote the effective workings of the organisation and that there are clear directions for employees around operational practices. However, the findings from the interviews suggested that some of these operational practices and procedures could be made clearer and more consistently communicated across all areas of the Group.
With regard to personnel, respondents were generally positive around training and development opportunities, however, the findings from the interviews suggested that more emphasis on training should be given by the organisation.

7.5 Perceptions of Knowledge Management Practices

As with the identified organisational cultural factors identified in the proposed Knowledge Management Structural Model for the Group, there was an overall agreement that the different identified knowledge management practices of: knowledge generation; knowledge sharing; and knowledge application were in place within the organisation. The interviews suggested that there was a generally sound

level of awareness and understanding of knowledge management within the organisation but that certain barriers were in place to prevent knowledge management practices from being consistently and effectively implemented across all the functions and departments of the Group.
The 'knowledge application' component of the Model, scored the highest in the survey (3.48), followed by 'knowledge generation' (3.48), and lastly 'knowledge sharing' (3.23).

With regard to knowledge application, respondents were in most agreement with the statements suggesting that the organisation effectively uses new knowledge to improve working procedures and improve operations. Also, they are more strongly agreed that the organisation has different methods and techniques in place to apply knowledge.

With regard to knowledge generation, it was generally felt that the organisation has the right skills and systems in place to generate knowledge and that the Group looks to identify best practice.

Conversely though, there was less agreement that the organisation promotes research and the facilitation of brainstorming sessions to generate new ideas and creativity.

In relation to knowledge sharing, there was a relatively high level of agreement that there was a culture in place for sharing formal knowledge through written publications and other such mediums. However, there was less agreement around this existing to support the more informal exchanges of information and knowledge. Whilst within knowledge generation, there was an agreement that the best practice is sought, within knowledge sharing there was less agreement that this best practice is then shared.

The findings from the interviews suggested that one reason for this is perhaps of lack of mutual trust between the different departments and also that the current organisational structure does not promote effective knowledge sharing.

7.6 Correlation between Organisational Cultural Factors and Knowledge Management Practices

In contrast to many of the other previous studies which suggest a strong link between organisational culture and knowledge management (Tseng, 2010; Janz and Prasarnphanich, 2003), the findings from this study found less of a correlation. Although, there was some evidence, particularly around knowledge sharing, that when there was strong agreement with the various organisational cultural factors, there was a correspondingly high level of agreement that knowledge sharing practices were in place.

The findings are consistent, however, with the findings from Omerzel, Biloslavo and Trnavcevic's (2011) study of culture in higher education institutions discussed earlier in the literature review, which also did not have any significant correlations between certain types of organisational culture and knowledge management processes. Instead they found linkages between different sub cultures and knowledge management in the organisation and this is something that could perhaps be any area for further investigation within the Jordan Telecom Group (Orange).

The findings from the interviews would support this proposition as there were indications that different sub-cultures do exist within the organisation across different functions and departments.

7.7 Limitations of the Study

Within the study there were a number of limitations that need to be acknowledged.

Firstly, whilst the survey and interviews generated some useful and important information, they were undertaken on a relatively small sample of employees, and a larger sample may have increased the reliability and validity of the study findings. In addition, the study was focused only on the perceptions of the employees and

perhaps incorporating more tangible data and outcomes from the Company into the study may have provided some additional context to the study.
Secondly, knowledge management in general, is an area of research where theory is still inadequate, and assumptions cannot be widely circulated, which is particularly the case in this study where the research seeks to develop a new understanding of knowledge management. Similarly, because knowledge management practices are hard to measure, the impact of knowledge management implementation might be difficult to quantify over a short period of time.

Thirdly, there are potential limitations associated with gender issues associated with the Arabic culture. There are particular considerations around conducting interviews with women. All of the interviewees in this sample were male, which is consistent with the workforce demographics, but it is possible that female employees may have had different perspectives and experiences about knowledge management to their male counterparts.

Finally, the study was limited to the Jordan Telecom Group (Orange) as a case study and, therefore, there is a potential difficulty in the dissemination of its results and their wider application.

7.8 Chapter Summary

This chapter discussed the meanings and implications of the survey and interview findings and how the organisational cultural factors and knowledge management practices within the Jordan Telecom Group (Orange) relate to each other. It confirmed that whilst some knowledge management practices may be well established in some parts of the organisation, they are less well established in others and that different cultural and organisational factors may account for this such as a perception of limited scope for research and innovation and structural barriers in the organisation.

It also highlighted some of the key limitations of the study which could be considered for future studies in the organisation and in the industry in general.

The findings provide the management team of Jordan Telecom Group (Orange) with a steer on what aspects of culture need further attention if knowledge management practices are to really flourish and be effective within the organisation and provides a useful baseline from which any changes in future perceptions and experiences can be measured.

The next and final chapter will provide a conclusion summarising the research and demonstrating how the results of the study relate to the original research questions and the objectives set out in this thesis. It will also highlight some recommendations for future research and action for the Jordan Telecom Group (Orange) to consider.

Chapter Eight: Conclusion and Recommendations

8.1 Introduction

This chapter provides a conclusion on the outcome of the study against the original study aims, objectives and research questions. It also makes some recommendations for consideration by the Jordan Telecom Group (Orange).

8.2 Conclusion

The critical review of the literature found support for the proposition that organisational cultural factors can impact on the extent to which different knowledge management practices exist in organisations and the effectiveness of these in gaining competitive advantage, enhancing performance and facilitating greater creativity and innovation. The study explored the individual concepts of knowledge and culture and critically reviewed the different perspectives on knowledge management and its implementation.

The first research question posed by this study was to identify what organisational cultural factors may impact on knowledge management practices within the Jordan Telecom Group (Orange), and then to identify which of these should be incorporated into a Knowledge Management Structural Model suitable for the Group. The literature review answered this research question by identifying a number of key organisational cultural factors that may impact on knowledge management practices and six of these factors were selected as being most relevant to the Group based on the researcher's knowledge and understanding of the functions within the organisation.

These factors were categorised under the headings of: Information Systems; Organisational Structure; Operations; Personnel; Incentive Systems; and Leadership. These formed the basis of the proposed Knowledge Management Structural Model for the Group.

The Model also comprised of another dimension around knowledge management practices, and the second research question posed by the study was to identify what the key knowledge management practices relevant to the Jordan Telecom Group (Orange) were and also what should be incorporated into the Model.

Again, the literature explored understandings of knowledge management and these were synthesised into three key practices considered to be most relevant to the Jordan Telecom Group (Orange), along with a review of the organisation's strategic plan and the research question was answered by identifying knowledge generation; knowledge sharing; and knowledge application as the key knowledge management practices relevant to the Group.

The purpose of this study was to investigate the different components of the proposed Knowledge Management Structural Model from the perspective of its employees, and to assess if there was any correlation between perceptions of how embedded the different identified organisational cultural factors are in the organisation and the perceptions of how firmly different knowledge management practices were implemented in the company.

Overall, the findings from the survey confirmed that there was general agreement that the identified organisational cultural factors in the Model were relevant and embedded to some extent with the Jordan Telecom Group (Orange) thereby answering the fourth research question posed by this study. In particular, respondents were in agreement with the statements around Information Systems and Organisational Structure and less around Incentive Systems and Leadership.

In addition, there was general support to confirm that the identified knowledge management processes in the Model were in place within the Jordan Telecom Group (Orange), with a higher level of agreement for knowledge application processes and less for knowledge sharing processes, answering the fifth research question.

To answer the final research question the relationship between the cultural factors and knowledge management processes was explored through the analysis of the data.

Despite much of the previous research suggesting that there is a strong link between organisational cultural factors and knowledge management processes, this study found less of a correlation, although there was some evidence to suggest that knowledge sharing practices in particular, are more strongly associated with different organisational cultural factors.

Overall, the research study has resulted in the production of a relevant Knowledge Management Structural Model that could be applied within the Jordan Telecom Group (Orange), and has identified which aspects of organisational culture are considered to be most embedded currently in the organisation from the perspective of the organisation's employees.

The findings also provide leaders and managers of the organisation with a clear steer on where efforts may need to be focused in order to strengthen different parts of the organisation and subsequently its culture, to ensure that any future implementation of knowledge management is done effectively. Whilst managers cannot force the process of the implementation of knowledge management to occur; they can instead create some of the necessary conditions in which this implementation can interact with the knowledge management seedlings to successfully implement the Knowledge Management Structural Model.

8.3 Recommendations for Action

Based on the discussions and explanations included in the study and the findings obtained from the employee survey and interviews, the study proposes a set of recommendations that are intended to be of benefit to the Jordan Telecom Group (Orange) and potentially also other companies which operate in the telecommunication sector in Jordan.

Objective one: To explore the need and benefits of knowledge management and how it can improve the efficiency of the telecommunications sector in general and in the JTG (Orange) in particular

The following recommendations are proposed to increase the efficiency of the sector, through the case study company of Jordan Telecom Group (Orange):

1. The study identified both through the review of the current literature and from the survey and interview findings themselves, that leadership is an important organisational cultural factor impacting on the implementation of knowledge management in organisations.

   It is therefore recommended that senior management engages more fully and more proactively with knowledge management programmes, with full support for the implementation of these programmes and through promoting a culture of teamwork and tolerance with mistakes to encourage innovation, positive risk taking and creativity.

   This focus on leadership around knowledge management could help deliver important organisational benefits including staying at the forefront of competitors, reduced costs, achieving added value, and maintaining market share and securing business leadership.

2. Given the important role the workforce plays, and being the most important element upon which any organisation depends on to provide excellent services to customers, and in generating new knowledge, creativity and innovation, it is recommended that greater attention is given to employees and their levels of job satisfaction. The study suggested that employees perceive they are not fully engaged in the decision making process, and that they are not sufficiently encouraged to develop their skills and enhance their performance. Individual initiative and innovation should be given greater acknowledgement and training programmes supporting knowledge generation, sharing and application should be developed and promoted across the workforce.

3. The study found strong evidence to support the proposition that incentive systems can impact positively on the success of knowledge management programmes.

However, from the survey and the interviews, it was apparent that employees do not feel strongly that these incentives fully exist within the organisation, or there is a lack of clarity about what they may be. The study therefore recommends the development of such incentive systems (such as team events, training opportunities, flexible working options) and bonuses and to offer effective individualised incentives to creators and owners of outstanding achievements in and around the field of knowledge management (such as team awards).

4. The operations form the structure in which the organisation provides services to its customers through the employment of specialised staff. Due to the wide diversity of skills sets amongst the staff group, it is recommended that training sessions are developed and introduced to clarify the organisational processes and procedures so that there is common and shared understanding across all sections and departments.

   This should help to ensure efficient delivery of the operational functioning of the organisation and will encourage knowledge sharing amongst staff when procedures and processes are reviewed and adapted.

5. Organisational structure was identified in the study as an important factor that can help facilitate or inhibit the effective implementation of knowledge management in any organisation. The interviews in particular, suggested that the organisational structure within Jordan Telecom Group (Orange) may need to be reviewed and that currently, barriers and boundaries exist between some of the key functional areas in the Group. It is therefore recommended that the organisational structure is reviewed to assess what changes could be made to ensure it is a facilitator of knowledge management and not an inhibitor, such as integrating teams. This may include making the structure more receptive and flexible to contribute in the transfer of knowledge between the organisational units, through the development of communication networks between the administrative levels and other areas of the organisation to ensure the smooth flow of information without any obstacles.

Objective two: To explore existing knowledge management practices and identify critical success factors to implement the proposed Knowledge Management Structural Model with the Jordan Telecom Group (Orange)

The study has examined a number of the existing knowledge management frameworks and models, and this has highlighted a number of issues and barriers for implementing knowledge management systems within a given telecommunication organisation. Therefore it was of great importance to ensure that the development of the proposed Knowledge Management Structural Model took into consideration all the factors and the parameters affecting the success of this model.

There are, however, a number of ways in which they could start to be addressed and so the following recommendations are proposed to increase understanding about existing knowledge management practices and the critical success factors to their implementation:

1. Awareness and understanding of knowledge management as a general concept, and its more specific individual components, appears to be inconsistent across the organisation and perhaps the sector in Jordan as a whole. It is therefore recommended that a corporate communications campaign is instigated to give a clear and common understanding of what knowledge management means and its importance to the organisation.

2. The Knowledge Management Structural Model should be effectively disseminated to all departments to review and implement in their areas, incorporating a mechanism for departments to feedback to management about any specific barriers to implementation or examples of best practice that can be shared with other departments.

3. A repeat survey of employees should be undertaken once the Knowledge Management Structural Model has been disseminated and introduced and the findings compared against those in this study to see if awareness of knowledge management practices has increased.

8.4 Recommendations for Future Research

Whilst this study did collect some demographic data about the various characteristics of the individual respondents to provide some context to the study, these characteristics were not a key comparative feature within this research.

It may be interesting to explore what differences, if any, there may be between the perceptions of employees around organisational culture and knowledge management practices, by different groups such as age group; gender; race; and position in the organisation. This may then identify if certain groups need more or less support around engaging in effective knowledge management practices, or if there are any particular barriers associated with one group that the organisation may need to tackle specifically.

Similarly, it may be useful to further explore the attitudes of employees towards the different knowledge management factors identified in the model with a comparison between the views of front line employees and management to identify any similarities or differences in perceptions and experiences, which could inform future practice.

In addition, if the proposed Knowledge Management Structural Model is accepted and implemented by the Jordan Telecom Group (Orange), as mentioned above, it may be useful to repeat the survey in a year's time (or other appropriate timescale) to assess if perceptions around organisational culture and knowledge management practices have changed. This will help to assess the effectiveness of the Model.

Further research work around comparing knowledge management approaches and organisational culture amongst different companies both within the industry and external to it may also generate useful knowledge in terms of identifying what practices work best in different scenarios and cultural contexts, and what challenges and barriers exist for different companies. It may also generate examples of best practice that can be shared across organisations.

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Appendices

Appendix 1 – Jordan Telecommunication Sector Profile

1.1 Introduction

The Information and Communications Technology (ICT) field is an area that is seen as an opportunity in which Jordan can increase its competitive advantage over other countries in the region, consequently Jordan have taken very serious steps in order to launch its major ICT initiatives aiming at developing the ICT sector.

1.2 Historical background

In 1995 transforming of the telecommunications environment in Jordan began with the passage of a new Law which subsequently led to several important developments, most notably the separation of operation from regulation, a common first step in the liberalization of telecom environments. This was followed by the incorporation of the incumbent telecom provider into a new entity, the Jordan Telecommunications Company. The Law was also establishing a Regulator, the Telecommunications Regulatory Commission or TRC.

1.3 Stable Environment, Trade Linkages and Agreements

Sound macroeconomic management, prudent fiscal and monetary policies and sustained structural reforms including legislative, regulatory, and judicial reforms have positioned Jordan as an ideal base for export-led growth to regional and international markets.

Jordan has an excellent and well-trained police force and military that are responsive and able to handle any contingency. The Kingdom consistently ranks among the safest and most corruption-free locations for business in the world and among Arab nations, in particular.

Jordan is committed to freedom of expression and choice. Measured by the Annual Freedom House survey, Jordan ranks fourth in the region.

An array of international trade agreements offers a platform for direct foreign investment and export.

- EURO-MED Association Agreement came into force in 2002, the agreement aims at creating a free trade area by 2010.
- Greater Arab Free Trade Agreement (GAFTA) signed in January 2005.
- Jordan took preliminary steps towards full membership of the Common Market for Eastern & Southern Africa (COMESA), and was accepted as an observer to the COMESA secretariat general in November 2006.
- AGADIR agreement entered into force in 2006, which allows for diagonal accumulation of origin amongst its member countries.
- USA - JUSFTA has been in force since 2001. It was the first free trade agreement negotiated by the US with an Arab country, and the fourth with any country in the world and a complete free trade agreement between the two countries was achieved in 2010.
- Canada signed and ratified a free trade agreement with Jordan, its first with an Arab country, in 2009.
- An agreement with Turkey was signed in 2009, to enhance bilateral economic cooperation and boost trade and investments.
- An agreement with Singapore was signed in 2004, aiming towards gradual elimination of customs duties over a period of 10 years

(Jordan ICT Sector Profile, 2011).

1.4 Sector Background & Landscape

The Information and Communications Technology (ICT) field represents an opportunity for Jordan to increase its competitive advantage over other countries in the region; consequently Jordan has taken very serious steps in order to launch major initiatives aiming at developing the ICT sector.

In response to a challenge put forward by his Majesty King Abdullah II in 1999, the efforts were directed at devising a comprehensive framework for Jordan's ICT sector, which resulted in the REACH initiative (2000–2005). This was Jordan's national blueprint for nurturing a vibrant, export-oriented, and internationally competitive ICT sector, followed by the National ICT Sector Strategy (2007-2011), and the soon to be launched National ICT Sector Strategy (2012-2016). These strategies involved developing a regulatory framework, providing an enabling infrastructural environment, and offering sector advancement programs, human resource development, capital and finance.

Governments and non-governmental organisations worldwide have recognised the power of ICT to improve business, reduce poverty, improve public services and create an industry in which developing countries can gain a competitive advantage. The ICT sector utilizes low capital costs, as principal inputs to ICT production are human resources. Therefore, Jordan is well positioned to build upon its strong foundation of people to cultivate growth in the ICT sector.

1.5 SWOT Analysis of Jordan ICT Sector

The telecommunications sector in Jordan is characterized by many strengths that will create many future opportunities with the presence of some weaknesses that pose some threat**,** and that the Jordanian government and the private sector are seeking to avoid (int@j, 2011).

SWOT Analysis of Jordan ICT Sector

This table has been removed

1.6 Telecommunications Regulatory Commission (TRC), www.TRC.gov.jo

In 1995, Jordan was the first country in the Arab region to enact a modern to establish an independent telecommunications regulatory body tasked with the creation of the proper environment for investment in a competitive market, the Telecommunications Regulatory Commission (TRC).

The TRC is an independent body responsible for regulating and monitoring the telecommunications, information technology and postal sectors. Jordan's legal and regulatory framework for the telecommunications sector is continuously evolving to meet the changing dynamics in the technology, market and business models.
Self regulation - while monitoring the diversity, reach, prices and quality of services - is the ultimate goal for the TRC. Different markets have different maturity levels and hence will need different times to reach this ultimate goal.

Promoting competition in the sector is one of the main drivers for the TRC in presenting its mission and the country has seen the positive results of the coherence between the government policy and the regulatory framework.

1.7 National Information Technology Center (NITC), www.nitc.gov.jo

Launched in 1994, The National Information Technology Center supports the government in providing better services to Jordanian citizens through the provision of relevant and effective electronic services.

The NITC was established with a vision for excellence, effectively contributing to the drawing up and implementation of information technology strategies for the government of Jordan. This is to be achieved through the utilization of the latest technologies and tools needed to implement and manage ICT resources by means of maintaining a central governmental infrastructure for information technology and shared services; providing governmental entities with fit-for-purpose IT solutions and relevant consultations; launching innovative technological solutions in partnership with the private sector on the basis of mutual benefits; promoting a culture of excellence and innovation through the provision of a hospitable and incentive-based environment that encourages work ethics and provides equal opportunities and rewards outstanding players; and supporting local communities by facilitating access to technology and the Internet.

NITC represents the credible reference for assisting governmental entities to implement effective IT solutions that can enhance their productivity and improve their services offering.

1.8 Telecom Sector Statistics 2010

Statistics show the significant expansion in the telecommunications sector in Jordan, and identify the potential future opportunities for the industry as indicated below:

Telecom statistics

This table has been removed

Reference: int@j

Appendix 2 – Jordan Telecom Group (Orange)

Jordan Telecom Group (Orange) is considered to be the largest and the fastest-growing telecom provider in the Kingdom, by continuing to play a key role in the development of the Jordanian information and communication sector and improving the processes within it.

In 2006, as what is considered one of the biggest integration of its kind in the Jordanian market, Jordan Telecom Group had merged its four companies under one single umbrella, and became the sole integrated operator in Jordan to provide a comprehensive package of mobile, fixed and Internet services.

In 2007, the Group officially adopted the Orange brand — the commercial brand of France Telecom Group — marking yet another significant achievement for Jordan's Information and Communication Technology sector. This step was taken with the objective of providing the Jordanian market with the standardized world-class services offered by the Orange brand, which enjoys an impressive 190 million customers in 220 countries and territories worldwide.

Appendix 3 – Employee Questionnaire

(Part One: Basic Information)

Jordan Telecom Group (Orange) staff, please fill out this questionnaire by answering all the questions in it, and by ticking in the appropriate box

Sex: **Male** ☐ **Female** ☐

1. Age:

20 – Less than 30 ☐	**30 – Less than 40** ☐
40 – Less than 50 ☐	**50 – Less than 60** ☐
More than 60 ☐	

2. Qualification: **High School** ☐ Diploma ☐ Bachelor ☐ Master**s** ☐

3. Duration of employment in **(Orange):**

Less than one year ☐	**One year – Less than two years**
Two years – Less than four years	**Four years – Less than seven**
More than seven years ☐	

4. Number of companies you worked with before (Orange):

None ☐	**One** ☐	**Two** ☐	**Three** ☐	**More than four** ☐

5. Years of Experience:

One year – Less than two years ☐	**Two years – Less than four years**
Four years – Less than eight years	**More than eight years** ☐

6. Job Title:

Director ☐	**Team Leader** ☐	**Other** ☐
Supervisor ☐	**Manager** ☐	**Knowledge specialist** ☐

7. Training courses attended:

(Part two)

This part measures the impact of the organisational cultural factors (Information systems, organisational structure, incentive systems, operations, personnel, and leadership) in the implementation of knowledge management and to propose a knowledge management structural model.

A: Information Systems

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	**Information systems provide detailed and clear data that helps in spreading the culture of learning**					
2	**databases facilitate the process of using the information systems by the staff**					
3	**The information systems contribute in the development of the practices helping the company to adapt any new knowledge**					
4	**Strengthening the shared beliefs among the staff through the effective role of the knowledge management efforts**					
5	**Information systems contribute in strengthening the common assumptions about the importance of creativity and innovation**					
6	**information systems Support the common standards related to the transfer of knowledge within the company**					

B: Organisational Structure

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
7	The organisational structure provides the opportunities needed to promote the effective communications helping the exchange of knowledge quickly					
8	Organisational structure makes the job rotation easier, which contributes in the transfer of knowledge					
9	Organisational structure helps to adopt a policy of openness and remove the border, which promotes the culture of teamwork					
10	Organisational structure provides sufficient flexibility to facilitate the information participation process across the organisational units					
11	Organisational structure helps the horizontally knowledge flow in the company					
12	Organisational structure contributes in promoting the trends and practices that encourage individual initiatives					

C: Incentive Systems

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
13	The company traditions Include providing individual incentives for creative employees					
14	The company traditions reinforce the shared expectations of getting rewards when introducing creative ideas for solving the problems					
15	The company encourages employees to develop their skills, experiences, and the exchange of knowledge					
16	The company is sending creative employees to participate in training courses and conferences					
17	The company is providing financial incentives to get the job done efficiently and effectively					
18	The company is providing non-financial incentives to get the job done efficiently and effectively					

D: Operations

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
19	The company traditions help the main units employees to share the important data of the operations, which promotes the exchange of experiences and skills					
20	The company provides clear directions for the operations to help the staff working with skill and efficiency					
21	The company trends contribute in strengthening the policy of mutual influence between the supervisor and the employee					
22	The supervisor and the employee discuss freely what they need from each other, which contributes in the consolidation of the values of openness and the removal of barriers					
23	The company traditions encourage learning and continuous improvement of operations					
24	Operations are subject to the development and the continuous improvement through the adoption of a culture that promotes the acquisition and use of knowledge					

E: Personnel

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
25	The company traditions encourage employees to develop their ideas, experience, and their skills					
26	The company traditions provide training for staff to work on the performance development					
27	The company's practices contribute to promote the acceptance the difference and the other opinion among the staff so as to encourage the generation of innovative ideas					
28	The values in the company encourage individual initiatives					
29	The culture and the values of the company encourage the staff to promote teamwork and team spirit					
30	Standards and assumptions in the company help employees to be initiative and creative					

F: Leadership

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
31	Top management adoption of values and practices that promote teamwork philosophy for the exchange of ideas, experience and skills among workers in the company's various units					
32	Top management has a culture of forgiveness for mistakes to encourage innovation					
33	Top management encourages staff to take the appropriate decision, even if there are no rules follow					
34	Employees are encouraged to organize celebrations and activities Increase the ability to learn and acquire knowledge					
35	The company's senior management accepts change					
36	Top management creates an atmosphere of confidence and respect among employees to encourage them to generate creative ideas					

(Part Three)

Measures the implementation of knowledge management in the Jordan Telecom group (Orange), in terms of knowledge generation, sharing, and its applications

A: Knowledge Generating

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	The company has systems and programs documenting the experiences, practices, and expertise available to help in generating knowledge					
2	The company provides programs to develop knowledge and skills of the employees					
3	Conducting development research to help in generating knowledge					
4	The company traditions help employees to develop their experience and knowledge through seminars and teamwork					
5	Employees are encouraged to generate creative and innovative ideas					
6	The company is searching for best practices					
7	The company organises brainstorming sessions to generate creative ideas					
8	The company seeks to attract creative and distinctive competencies of universities and consultancy centers to help in generating knowledge					

B: Knowledge Sharing

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
9	The company provides methods to help in sharing knowledge					
10	The company has programs and activities for the exchange of experts and specialists between departments and units to enable staff to benefit from their experience and knowledge					
11	The company adopts a culture that promotes the exchange and sharing of experiences and knowledge through seminars, publications and reports					
12	The company supports building mutual trust between employees to share knowledge					
13	Knowledge owners do not want to share their knowledge with others					
14	The company supports sharing knowledge through dialogues and narrative stories of success					
15	The company is providing techniques to help the exchange of knowledge indirectly between employees					
16	The company organizes regular meetings and workshops to encourage employees to share knowledge					

C: Knowledge Applications

NO.	Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
17	The company has techniques and methods that help the use and the application of knowledge					
18	The company cancels all procedures and policies that limit their ability to apply knowledge					
19	The application of knowledge of one of the most important priorities of the company, and gaining the advantage of knowledge is more important than the knowledge itself					
20	The company is interested in the application of new knowledge when evaluating performance					
21	The company ensures to apply the lessons learned for improving its services					
22	Employees are encouraged to apply knowledge					
23	The company stresses on the importance of the use and the application of knowledge					
24	New knowledge is used to help improving the working procedures and to modify operations					